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AVERAGE FEATURES OF THE SUBSURFACE THERMAL FIELD IN THE CENTRAL--ETC(U)

NOV 76 T P BARNETT, J D OTT

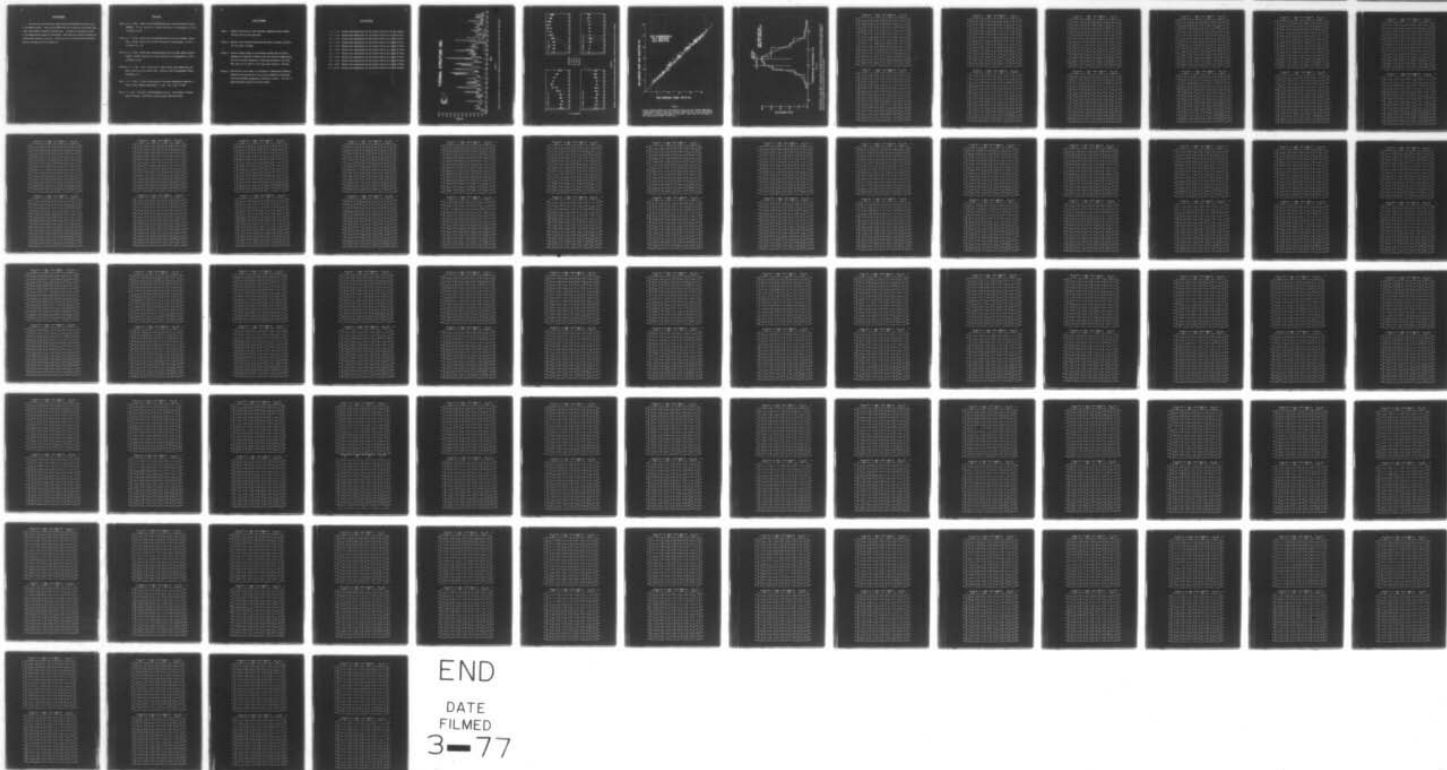
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AVERAGE FEATURES OF THE SUBSURFACE  
THERMAL FIELD IN THE CENTRAL PACIFIC

T. P. Barnett and J. D. Ott

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## 1.0 Introduction

The purpose of this report is to present the climatology of subsurface temperature in the central Pacific Ocean. This climatology provides an in-depth, 'fine scale' description of the thermal structure as opposed to the general climatology developed by Robinson (1976) in that it (a) presents finer horizontal and vertical scale information on the temperature field, (b) utilizes data not included in previous climatologies, and (c) represents actual observations as opposed to smoother fields derived from actual observations. These improvements in the climatology will be useful in the NORPAX project for determining the depth to which temperature anomalies penetrate in the ocean. Also, the data from which the climatology is developed can be used to study the interannual changes in heat content of the central ocean. It was with these ideas in mind that the present work was undertaken.

## 2.0 Data Sources/Density

The initial data were supplied by the NORPAX Data Group on 7-track, 800 BPS, character magnetic tape, card image records, and multiple records per BT. There were 5 XBT, 19 MBT, and 2 hydrographic data tapes that represented all of the temperature/depth in a region bounded by latitudes 25°N to 60°N and longitudes 140°W to 180°W for the time period 1942-1974.

Each input record from the raw data tapes was tested for validity and data range on the IBM-1800 computer and then merged into a standard header/data format on a group of 4 working tapes. The data available taken from each observation were:

IBX	- Lat-Lon Index: latitude = (IBX=3), longitude = (IBX -1)*4
Itype	- 1 = XBT, 2 = MBT, 3 = Hydro for observing system
Lat	- 25°N to (but not including) 60°N in degrees
Latm	- Fractional latitude, minutes
Lon	- 140°W to (but not including) 180°W in degrees



Lonm - Fractional longitude, minutes  
 Year = 1942 - 1974  
 Month - 1 - 12  
 Day - 1 - 31  
 Hour - 1 - 24  
 Minute - 1 - 60  
 Reft - Calibration temp (negative for no data)  
 Temperature - Data @ 0, 30, 60, 90, 120, 150, 200, 250, 300, 400,  
 500 meters (see below)

If, in processing the data, a surface temperature was missing, and there was a temperature at 10 meters or less, this temperature was used as a surface temperature. Linear interpolation was used to calculate temperatures at standard depths.

The individual types of instruments used to measure the temperature profile are discussed briefly below (see Wert, 1976 for additional information).

#### Expendable BT (XBT)

Data are sent to FNWC in the form of strip charts and their accompanying log sheets. These data are usually processed on the semi-automatic Calma (model 403) digitizer. The Calma device records the minimum number of points necessary to reconstruct the original trace. Sometimes an analog digital data system is also used. Regardless of the digitizing device, the data are recorded on magnetic tape. The repeatability of the Calma digitization is stated to be better than 96%. There were 12,639 XBTs available for analysis.

#### Mechanical BT (MBT)

Data are from the National Oceanographic Data Center. The data base is made up of digitized records obtained from MBT slides and their appropriate log sheets. Most of the MBT digitization was performed on contract by Scripps Institution of Oceanography with a semi-automatic digitizer. In this system, both the grid and trace,



aligned according to the temperature and depth correction, are projected onto a screen. The trace is followed manually with a stylus and the temperature data suitably digitized. Ancillary information is simultaneously recorded directly on magnetic tape along with the digitized trace data. This digitizing method has the advantages of being faster and somewhat more accurate than reading by eye. In all, there were 57,328 MBTs available for analysis.

#### Hydrocast Data

All of the hydrocast data are archived by NODC and available on magnetic tape. The data used in this report comes from the 1974 update of the NODC file and provided 7,422 hydrocasts.

Combining all data sources gave 77,389 (raw) observations of temperature vs depth in the region described above. The distribution of these data throughout the historical record (Figure 1) shows the number of observations per month in the entire study region. This distribution is rather uniform in time although a higher observation density exists during summer months. Also, note the phaseout of the MBT in 1966 - 68 and the subsequent phase-in of the XBT. Since these instruments measure to different depths, one may expect the climatology for the greater depth (>150m) to be representative of a shorter base period. This may be important for some uses. Finally, it should be noted that ocean weather ships contribute, on the average, slightly over 100 observations per month to the total data set.

### 3.0 Data Editing

Review of the space/time density of available data suggested that an appropriate grid for construction of the mean field would be quadrangles  $2^{\circ}$  of latitude x  $10^{\circ}$  of longitude. The time interval for the climatology was selected to be 1 month. The latter value was small compared with the time scale of change of the anomalies which it was desired to study. Similarly, the spatial dimensions of the averaging areas were also small compared to the spatial scale of anomalies. Perhaps as important,

the small latitudinal extent of the averaging areas (called 'boxes') allowed us to avoid the spatial aliasing problem that results from taking quasi randomly distributed samples in a high gradient field. Thus, the fact that the sampling centroids for a given box/month do not occur precisely in the middle of the box, will introduce negligible error to estimation of the mean field.

After all of the available BT and hydrocast information had been sorted into appropriate geographical boxes and one-month intervals, it was gridded in the vertical. The standard depths used were 0, 30, 60, 90, 120, 150, 200, 250, 300, 400 and 500 meters. This selection of depths allows us to adequately resolve the seasonal change in the heat content of selected slabs of ocean. Note that it would be somewhat difficult with the coarse grid in the near surface region to determine the "depth of the mixed layer," a nebulous quantity at best.

The data field resulting from the above operations was a series of gridded values in x, y, z and t space. These values were next subjected to two screening procedures to remove data that was clearly incompatible with the main body of information.

#### Screening Procedure #1

Climatological values of temperature at 0 and 120 meters for each grid location and month were interpolated from the Robinson atlas. These values, which had been carefully scrutinized and smoothed, presented a first guess at the mean field. The individual, raw BT information was compared with this first guess at the two depths indicated above. An individual BT was rejected if it differed from the first guess by more than  $\pm 40\%$ , a value representing very large interannual variations (Ballis, 1973a, b, c). Thus, any BT trace that failed this first screen was eliminated from the data set altogether.

#### Screening Procedure #2

The remaining data were used to form monthly means on the x, y, z grid system. The standard deviations about these means were also computed. Each observation



belonging to a given grid point and time was checked to see that it was within three standard deviations of the newly computed mean. Values outside of three standard deviations again caused the entire BT to be excluded from the data set. The second screening procedure eliminated only a small fraction of the observations. However, once these had been eliminated a new mean and standard deviation were computed.

The means, standard deviation and number of observations per space/time grid point remaining after the original data had passed through the two screening procedures represent the substance of this atlas. In all there are 71,295 individual observations of temperature versus depth that have gone into the establishment of mean fields shown in Section 5. Approximately 40% of these observations come from standard weathership locations and so the quality of the mean field estimates is quite spatially dependent. Nevertheless, the total field turned out to be rather smooth and very 'reasonable' (see below).

#### 4.0 Verification

A number of methods have been used to verify that the resulting estimate of the climatological thermal structure field in the central Pacific are reasonable. These are enumerated briefly below.

##### (A) Vertical consistency

Over much of the region of interest one would expect the temperature to decrease as a function of depth. The exception to this lies in the region near latitude  $45^{\circ}\text{N}$  where there is a well known thermal inversion. With the exception of this region, all other data were inspected to insure that temperature did decrease with increasing depth.

##### (B) Horizontal consistency

One would expect the temperature to increase as latitude decreases. This was numerically checked. With the vast majority of the data this is true. However, there are examples, particularly in the northern part of the study area, where



temperatures at higher latitudes during a selected month are slightly higher than those immediately to the south. This situation occurs where there are a very small number of samples available to estimate the means in a given space/time box. These situations have not been excluded from the tables shown in Section 5. Thus, they can provide the critical reader with an idea of the uncertainty that may be inherent in our climatological field.

(C) Temporal consistency

The annual cycle of the surface and 90 m mean field in each of the given spatial boxes has been plotted and inspected to insure that values obtained during, say, summer are, in fact, greater than those obtained during winter. Examples of these plots for selected latitude bands and depths are given in Figure 2.

(D) Comparison with other data sources

Ideally we would like to compare our observations with the atlas results of Robinson (1976). However, that data source has already been used in our first screening procedure and, therefore, such a check would not be independent. It is possible, however, to compare the surface climatology with the estimates of the mean sea-surface temperature field obtained from Jerome Namias. The comparison is presented in two ways in Figures 3 and 4. The first case shows a scatter plot of SST determined from millions of ship injection temperatures (Namias) versus those obtained from the surface values of the more limited BT/hydro data set. The ship injection temperatures are seen to be warmer, on the average, than those obtained from the BTs, but this effect was expected and has been previously documented (e.g., Robinson, 1976; Saur, 1963). The scatter diagram does have an interesting property in that the two estimates of SST converge where the highest temperature is observed. Comparison with the ship injection temperatures may be presented in another way. Figure 4 shows the frequency distribution of the difference between the two SST fields; one obtained from the BTs, the other obtained from the ship injection temperatures. It is seen that the mean difference between

them is approximately  $0.4^{\circ}\text{C}$ , as expected. Taking this into account, it is abundantly clear that the average difference between the two fields is typically less than a degree centigrade and that the difference is approximately normally distributed. On the basis of the two above curves we may conclude that the SST field derived from the BT information is statistically equivalent to that derived from ship injection temperatures (after allowance is made for the fact that the injection temperatures are known to be higher than the bucket temperatures associated with the BT observations).

(E) At least three different types of instruments have been used to obtain the data that has gone into the mean field. One might well ask, do these instruments bias the quality of measurement; that is, do the mean fields obtainable from the different instruments agree in a statistical sense? This is essentially the Berhens-Fisher problem and can be answered with a version of the Students' 't-test.' Unfortunately the problem is compounded here by the fact that the time interval covered by the mechanical BTs is essentially not the same time interval sampled by the majority of the XBTs (cf Figure 1). Thus the instruments could be returning the same estimates of a field that does not have a stationary mean value since the period of the '50s and early '60s may not be similar to the period of the '60s and early '70s. Hence, the t-test mentioned above not only compares the quality of measurement from the various instrument types, it also says something about the long term stability of the climatological mean field developed in this work. There is a further restriction that the mechanical BTs seldom go below 150 meters. Hence, any comparisons made between the different types of instruments must be made at this depth or shallower.

All combinations of pairs of fields have been examined with the test indicated above. Also, mean field derived from each measurement device has been compared with the grand mean field developed from all of the data. The general conclusion derived from these numerous analyses is that the instruments do not introduce a significant bias in estimates of the mean field, except perhaps at the sea surface where the comparisons are marginal.



## 5.0 Results/Cautions

Tables 1 through 11 show the estimated mean field for each month for each  $2 \times 10$  degree quadrangle and each depth. Selecting a given time and depth, each box contains three entries. The center value gives the mean temperature in degrees centigrade, the value on the lower right the standard deviation associated with that mean and the number on the lower left in the box gives the number of observations available from which the mean and standard deviation were constructed. The latitude/longitude coordinates of the data field are given along the sides of the printout and indicate the centroid of the sampling regions. All of the data contained in the fields is available on magnetic tape.

The resulting mean fields do have several peculiarities that require caution on the part of the user. The most notable events are:

(A) In some cases water temperatures are higher at more northerly latitudes than they are at latitudes immediately to the south. This event occurs very infrequently and, when it does, is generally only apparent at the highest latitudes. It can be traced directly to the fact that there is very limited data in the areas where these peculiarities occur. Such situations have been left in the data so that the critical scientist may determine how much faith he wishes to place in regional means.

(B) Standard deviations, particularly at the surface, are high near  $40^{\circ}\text{N}$ ,  $175^{\circ}\text{W}$ . Notice that the standard deviations drop as one moves eastward along latitude 40 and/or with increasing depth. This region is in the vicinity of the subarctic front and one would expect high variability here. Also, since it occurs in the westernmost edge of the study region it may be ascribed to the fact that this region is near the extension of the Kuroshio and Oyashio confluence and thus is an area where high variability is to be expected. Visual inspection of the data that have gone into the calculations for this region show them to be reasonable with respect to all of the verification and screening of standards mentioned above. However, the data appear to characterize two rather distinct oceanic states, i.e., they come from a subtropical



water mass or a subarctic water mass. Thus the estimates of the mean in this region may be somewhat misleading for they describe a situation which physically does not exist. Fortunately this effect appears confined to only one or two of the quadrangles in the vicinity of the region mentioned and does not affect the rest of the mean field calculations. However, the user of these data is forewarned that the mean field estimates given here may not be representative of the actual physical conditions in this region.

(C) As indicated above, a significant portion of the data come from observations at the ocean weather ships. These regions of high observation density are clearly apparent in the Tables shown below. It is important to note that the estimates of the mean field in the region surrounding the weather ships have in no way been influenced by the weather ship values. On the other hand, if one wanted to construct an areal average in the vicinity of the weather ships, the estimates of the mean field coming from those boxes with a large number of observations probably should be given more weight than their surrounding neighbors.

(D) The data below 150 m come mainly from XBTs. It is clear from Figure 1 that these data are abundant only after 1968. Hence, the mean field at greater depth is estimated from a relative short record. This depth dependent base period for construction of the means may cause problems in some applications. However, it is the best that can be done with available data. This problem does not generally exist in the vicinity of the weather ships where numerous MBT and hydrographic data extend back into the 1950's.

(E) The data become increasingly sparse with greater depth. At the greatest depths the data are presented only to give an idea of the total coverage to date rather than as a valid estimate of the mean field. It has been left to the individual scientist to judge the region/depth below which the estimates become meaningless.

### Acknowledgment

This work has been carried out under contract ONR N00014-75-C-0152 as part of the NORPAX program. Thanks are due Bonnie Muir for extracting the original data from a large number of magnetic tapes and also Ron Moe for assistance on some of the computational aspects of the program. Grace Johnston faithfully decoded the verbiage that appeared as the text. Thanks also goes to Buzz Bernstein and Warren White for reviewing the final manuscript.



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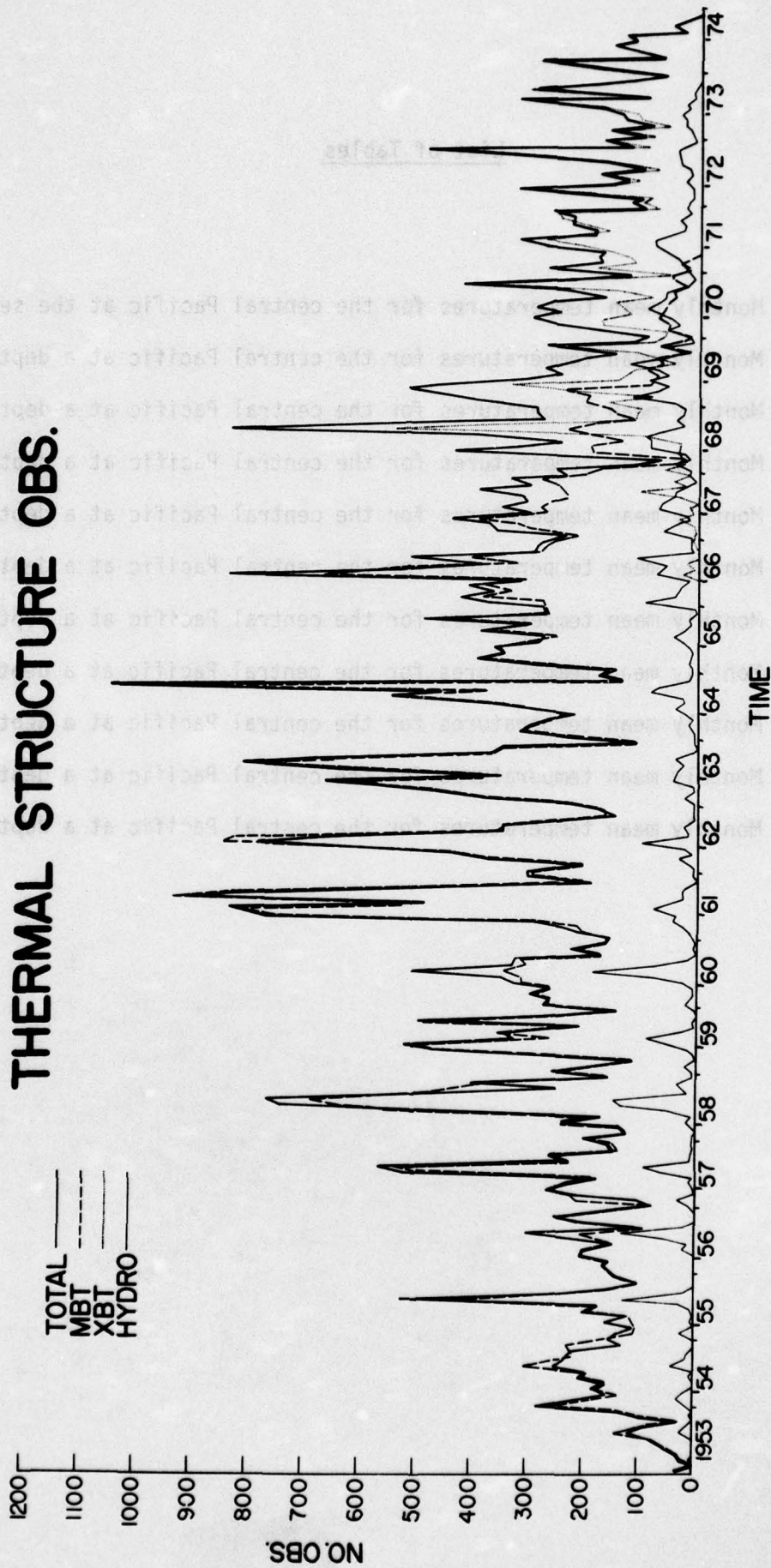


Figure 1

Temporal distribution of the subsurface temperature data by month and data type over the study area.

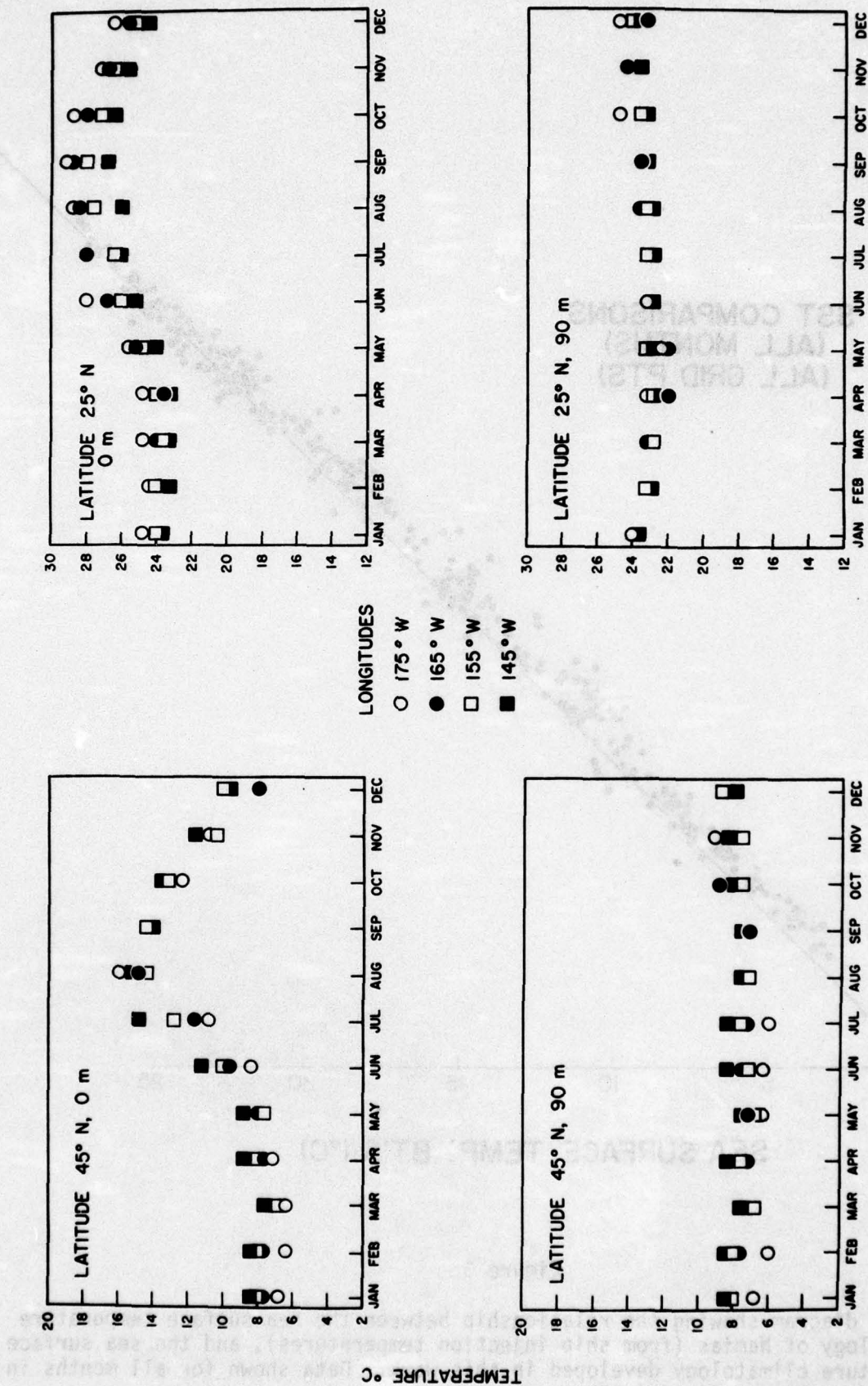


Figure 2

Seasonal cycle obtained from monthly mean data at depths 0 and 90 m for two typical latitudes.



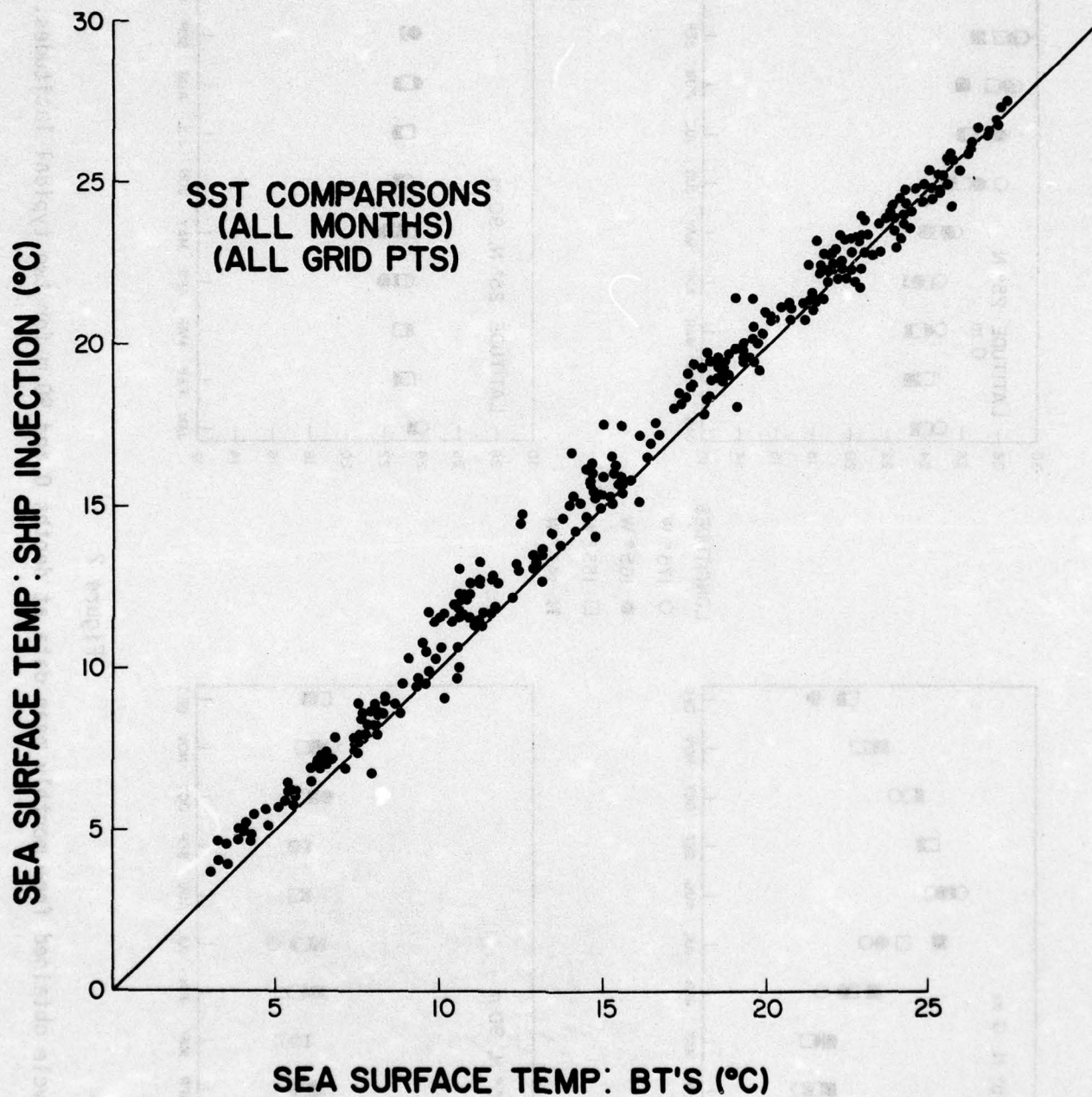


Figure 3

Scatter diagram showing the relationship between the sea surface temperature climatology of Namias (from ship injection temperatures), and the sea surface temperature climatology developed in this work. Data shown for all months in the study region defined in the text.

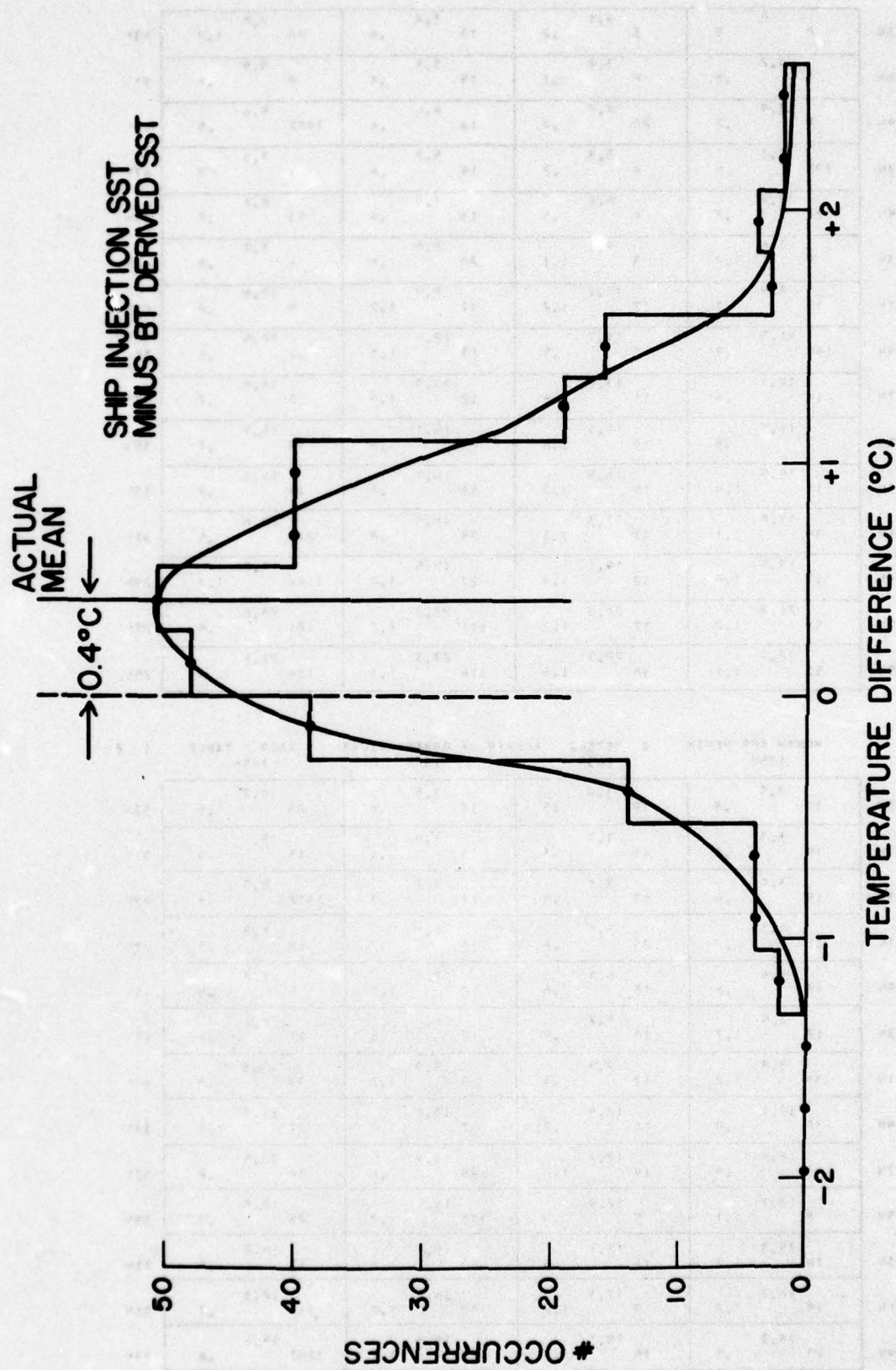


Figure 4

Distribution of the number of occurrences of temperature difference obtained by subtracting the BT sea surface temperature climatology from the sea surface temperature climatology of Namias. The bias is expected from the results of earlier workers.



MONTH JAN DEPTH 0 METERS NUMBER OF OBSERVATIONS 4462 TABLE 1 1  
175M 165M 155M 145M

53N	0	0	3	4.1	.2	17	3.4	.4	16	4.8	1.0	53N	
51N	3	4.2	.8	5	3.8	.1	15	3.9	.5	8	5.9	.6	51N
49N	9	3.9	.2	20	4.0	.0	14	4.6	.4	1482	5.6	.5	49N
47N	125	5.1	.6	4	5.3	.2	14	5.8	.6	1	7.3	.0	47N
45N	28	5.8	.8	4	6.0	.5	13	7.3	.4	13	8.1	.8	45N
43N	9	7.6	1.0	3	8.7	1.1	20	8.8	.8	6	8.7	.4	43N
41N	19	8.9	.7	12	10.1	1.2	17	9.9	1.2	5	10.8	.2	41N
39N	164	11.3	.9	7	11.7	.5	13	12.0	1.0	2	12.5	.2	39N
37N	18	14.1	.6	11	13.5	1.6	12	13.9	1.0	9	14.0	.7	37N
35N	7	14.5	.8	10	14.1	1.2	95	15.1	.6	12	15.7	.7	35N
33N	11	15.9	1.4	15	16.5	1.3	50	16.1	.8	16	16.7	.9	33N
31N	39	17.8	1.1	13	17.3	1.3	25	18.5	.8	213	18.6	.5	31N
29N	17	19.5	1.0	12	19.1	1.4	27	19.5	1.0	1144	19.2	1.0	29N
27N	59	21.2	1.2	37	21.6	1.2	111	22.3	2.1	121	20.6	.8	27N
25N	51	22.4	1.1	38	22.3	1.6	116	22.3	1.1	114	21.6	.6	25N

MONTH FEB DEPTH 0 METERS NUMBER OF OBSERVATIONS 4809 TABLE 1 2  
175M 165M 155M 145M

53N	11	2.9	.3	19	3.4	.5	19	3.5	.6	25	4.2	.6	53N
51N	19	3.3	.3	47	3.3	.3	13	4.0	.4	15	5.1	.4	51N
49N	19	3.4	.6	67	3.8	.5	11	4.2	.3	1312	5.3	.4	49N
47N	31	4.3	.4	25	5.0	.8	10	5.8	1.2	18	6.3	.5	47N
45N	48	4.6	.6	18	6.8	.6	12	7.0	1.0	5	7.8	.8	45N
43N	12	7.5	1.7	10	8.2	.9	12	8.4	.5	11	8.6	.6	43N
41N	34	8.8	1.2	12	9.8	.9	8	9.9	1.1	34	10.3	.6	41N
39N	30	11.1	.9	14	10.9	.7	7	10.8	1.0	22	11.9	1.0	39N
37N	40	12.9	.9	19	12.4	1.0	25	12.4	.6	30	13.5	.8	37N
35N	8	13.9	1.1	5	12.9	.4	178	15.4	.7	26	14.8	.9	35N
33N	16	15.3	1.2	12	15.5	.8	99	15.8	.8	37	16.4	.8	33N
31N	15	16.7	1.2	9	17.3	1.2	50	16.9	1.2	132	18.3	.7	31N
29N	23	18.3	.9	15	19.3	.8	50	18.5	1.1	1287	18.6	.6	29N
27N	47	20.1	1.6	17	20.4	.8	105	20.1	.9	187	20.0	.7	27N
25N	47	22.4	1.1	40	21.9	1.2	130	21.6	.7	210	21.0	.7	25N

MONTH APR DEPTH 0 METERS NUMBER OF OBSERVATIONS 5128 TABLE 1 3  
175M 165M 155M 145M

53N	10	2.7	.3	18	2.5	.4	21	3.4	.6	13	3.9	.8	53N
51N	41	3.4	.4	5	3.2	.1	18	3.9	.3	4	5.0	.6	51N
49N	24	3.4	.3	4	3.6	.1	15	4.5	.5	1429	5.2	.6	49N
47N	63	4.0	.4	7	4.3	.6	11	5.2	.5	5	5.5	.4	47N
45N	22	5.2	.7	9	5.9	1.0	5	6.5	.4	3	7.5	.3	45N
43N	62	6.9	.7	9	7.7	1.3	16	8.4	1.0	5	8.4	.3	43N
41N	30	9.4	.8	1	9.2	0	47	9.8	.8	8	10.1	.6	41N
39N	67	11.6	1.4	5	10.9	1.1	55	11.4	.8	8	11.8	.9	39N
37N	28	13.4	.9	7	12.7	.5	54	12.5	1.0	13	13.8	1.1	37N
35N	56	14.3	.6	14	13.6	.6	56	13.9	1.2	52	15.1	.8	35N
33N	82	15.1	.7	32	15.3	1.1	47	15.2	.9	46	16.0	1.1	33N
31N	71	16.3	1.1	50	17.4	1.2	58	16.4	1.3	60	17.6	1.0	31N
29N	62	18.3	.9	58	19.4	1.5	93	18.9	.8	1270	18.4	.7	29N
27N	77	20.3	1.3	66	21.1	1.2	133	20.1	1.0	137	19.9	.8	27N
25N	77	21.9	1.3	155	21.9	.9	145	21.5	.7	89	21.2	.8	25N

MONTH APR DEPTH 0 METERS NUMBER OF OBSERVATIONS 5978 TABLE 1 4  
175M 165M 155M 145M

53N	15	2.8	.3	34	3.2	.4	70	3.8	.8	39	4.8	.9	53N
51N	7	3.4	.7	12	3.6	.4	52	4.0	.5	36	4.9	.7	51N
49N	7	4.0	.5	28	4.1	.6	37	4.6	.7	1748	5.6	.6	49N
47N	114	4.5	.5	4	5.3	.7	27	5.8	.6	17	7.0	1.1	47N
45N	21	5.2	1.3	18	6.7	.7	29	7.0	1.0	29	7.9	.7	45N
43N	21	7.3	.7	31	8.3	.8	53	8.5	.6	41	9.4	1.0	43N
41N	21	9.3	.9	45	9.7	.8	42	9.4	.8	31	10.3	.8	41N
39N	48	12.4	1.1	54	11.6	.9	12	11.3	.8	22	11.5	.9	39N
37N	41	14.1	1.3	41	12.9	.9	17	13.0	.6	17	13.8	1.3	37N
35N	37	15.5	.9	21	14.2	.8	17	15.3	1.5	41	14.8	.7	35N
33N	38	15.6	1.1	20	15.7	1.1	21	16.5	.8	43	16.1	.8	33N
31N	55	17.6	1.1	32	17.8	1.0	20	18.4	1.9	61	17.7	.8	31N
29N	81	18.9	1.1	42	19.5	1.2	69	19.7	1.4	1598	18.6	.9	29N
27N	124	20.6	1.4	48	21.1	1.3	84	20.8	.7	141	20.1	1.0	27N
25N	64	22.3	1.0	166	21.7	.9	172	21.9	.8	102	21.1	.7	25N



MONTH MAY DEPTH 0 METERS NUMBER OF OBSERVATIONS 6340 TABLE 1 5  
175M 165M 155M 145M

53N	53	3.5 .6	87	4.5 1.0	65	5.4 1.0	88	6.0 .9	53N
51N	83	4.7 .7	84	5.0 .8	65	5.4 .8	51	6.1 1.0	51N
49N	73	4.6 .7	56	5.0 .7	78	5.6 .6	2004	6.7 .7	49N
47N	128	5.3 .7	8	5.5 .7	72	6.4 .8	115	7.7 .9	47N
45N	17	6.6 1.2	24	7.4 .9	56	7.1 .5	35	8.6 .7	45N
43N	14	8.2 1.0	7	9.0 1.6	38	8.3 .6	2	9.2 .5	43N
41N	5	11.4 .7	14	11.0 .8	25	9.7 1.2	3	12.2 .9	41N
39N	54	12.7 1.2	19	12.4 1.2	15	12.4 1.2	11	13.4 1.2	39N
37N	19	14.5 1.3	19	14.2 1.1	18	14.3 1.7	26	14.9 1.1	37N
35N	24	15.9 1.0	17	15.9 1.5	31	15.8 1.7	57	16.1 1.1	35N
33N	36	17.7 1.7	18	17.3 1.6	13	17.5 1.1	69	17.6 1.4	33N
31N	18	19.0 1.6	24	19.3 1.5	15	20.0 1.0	59	18.6 1.3	31N
29N	95	20.6 .9	14	20.6 1.4	25	21.2 .7	1419	19.3 1.1	29N
27N	235	21.7 .9	25	21.8 1.3	36	22.0 .8	157	20.9 1.0	27N
25N	84	23.1 1.0	64	23.2 1.0	124	22.8 .7	150	22.0 .8	25N

MONTH JUN DEPTH 0 METERS NUMBER OF OBSERVATIONS 7227 TABLE 1 6  
175M 165M 155M 145M

53N	105	5.5 .9	154	5.4 1.2	170	8.5 1.3	68	8.1 1.1	53N
51N	337	5.7 .8	62	6.6 1.1	100	7.5 1.3	62	8.1 .8	51N
49N	112	6.6 .8	37	6.3 1.0	69	7.6 .8	1803	8.7 1.1	49N
47N	98	7.4 .6	19	7.5 1.2	70	8.2 1.0	37	9.4 1.2	47N
45N	38	7.3 .9	27	8.6 1.1	52	9.3 .9	77	10.8 1.3	45N
43N	87	9.1 .8	28	10.1 .9	61	10.2 1.2	54	11.5 1.7	43N
41N	32	11.1 .9	47	11.3 1.4	58	11.3 1.3	81	14.0 2.0	41N
39N	51	14.5 1.3	30	13.5 1.1	48	13.8 1.3	70	15.5 1.7	39N
37N	18	16.6 1.3	30	15.4 1.3	10	15.2 .9	33	16.7 1.2	37N
35N	9	17.2 .9	23	16.7 .9	17	17.4 1.8	29	18.2 1.2	35N
33N	15	19.0 1.7	41	19.4 1.8	18	19.9 1.7	50	19.1 1.0	33N
31N	26	21.0 1.2	39	21.3 1.7	18	21.5 1.0	37	20.7 1.3	31N
29N	88	22.0 1.3	47	23.5 1.2	32	21.9 .6	1619	20.7 1.2	29N
27N	173	24.3 1.3	37	24.0 .8	21	23.3 1.0	205	22.0 1.0	27N
25N	94	25.7 1.0	85	24.6 .9	100	23.9 .8	189	23.0 .8	25N

MONTH JUL DEPTH 0 METERS NUMBER OF OBSERVATIONS 7392 TABLE 1 7  
175W 165W 155W 145W

53N	115	7.5 .9	161	8.2 1.5	237	10.6 1.4	63	10.8 1.0	53N
51N	518	7.5 1.2	154	9.4 .8	126	10.2 1.2	73	10.9 1.0	51N
49N	191	8.2 1.1	104	9.4 1.1	78	9.6 1.0	1938	11.3 1.1	49N
47N	54	9.3 .8	33	10.0 1.8	39	11.1 1.5	40	12.6 1.1	47N
45N	7	10.3 .6	20	9.9 2.1	38	12.8 2.0	61	14.3 .8	45N
43N	5	11.0 1.0	16	12.9 1.5	83	12.8 1.8	53	15.5 1.2	43N
41N	130	13.7 1.2	18	14.3 2.4	112	15.3 2.8	63	16.9 1.3	41N
39N	96	21.6 2.4	107	20.4 3.4	90	19.3 2.2	80	18.8 1.3	39N
37N	15	23.2 2.9	30	20.3 1.9	34	19.4 2.1	81	19.5 1.0	37N
35N	6	22.9 1.7	18	21.9 1.4	35	20.7 2.0	39	20.8 1.1	35N
33N	6	24.0 1.3	27	23.4 .9	34	22.4 1.6	39	21.7 1.3	33N
31N	20	25.1 .8	14	24.0 .8	35	23.3 .7	57	22.3 1.0	31N
29N	44	25.6 .9	5	24.3 1.1	48	24.0 .7	1311	21.5 1.3	29N
27N	101	26.4 .9	8	25.8 .6	105	24.3 .6	146	23.0 1.0	27N
25N	56	26.5 .7	39	26.0 .6	170	24.6 .5	166	23.7 .7	25N

MONTH AUG DEPTH 0 METERS NUMBER OF OBSERVATIONS 8498 TABLE 1 8  
175W 165W 155W 145W

53N	118	8.9 1.0	219	10.4 1.6	174	11.8 .9	116	12.9 1.1	53N
51N	511	8.9 1.7	265	10.5 1.1	169	11.1 1.0	102	12.7 1.1	51N
49N	323	10.1 1.3	193	11.0 1.2	113	11.5 1.0	1696	13.0 .9	49N
47N	217	13.5 1.7	56	13.2 1.5	104	12.5 1.1	29	13.5 1.8	47N
45N	89	14.5 2.0	98	14.4 2.2	73	13.8 1.4	70	14.6 1.0	45N
43N	49	16.8 2.9	30	15.4 2.0	91	15.7 2.0	59	16.4 1.2	43N
41N	92	17.9 2.3	27	17.6 2.3	77	17.9 1.7	67	18.2 1.0	41N
39N	109	21.2 2.5	78	19.6 2.7	85	20.9 1.4	67	20.0 1.2	39N
37N	50	23.5 1.4	17	22.3 1.4	43	22.6 1.0	48	21.5 1.7	37N
35N	12	24.6 1.4	9	24.2 .9	69	23.7 .9	51	22.3 1.2	35N
33N	18	25.5 1.1	23	24.8 .6	49	24.9 1.0	15	22.3 1.1	33N
31N	15	26.0 1.1	16	25.3 .8	53	25.4 .9	49	22.4 .9	31N
29N	26	26.4 .9	4	25.3 .8	74	25.1 1.0	1516	22.4 1.2	29N
27N	85	26.6 .8	10	25.6 1.7	114	26.2 1.1	202	23.3 1.3	27N
25N	52	27.0 .7	34	26.3 1.1	143	26.0 1.0	133	23.9 1.2	25N



MONTH SEP DEPTH 0 METERS NUMBER OF OBSERVATIONS 7235 TABLE 1 9  
175M 165M 155M 145M

53N	45	8.9	.9	124	9.5	1.3	72	11.1	1.0	27	12.2	.8	53N
51N	113	8.8	1.7	107	10.7	1.2	91	10.9	.7	63	12.2	1.0	51N
49N	82	10.8	1.0	61	11.7	1.3	43	11.2	1.1	2143	12.9	1.0	49N
47N	74	11.7	1.1	37	14.1	2.2	42	12.3	.9	31	13.6	1.2	47N
45N	55	13.7	1.4	53	13.4	2.0	37	13.6	.8	16	13.1	1.2	45N
43N	30	15.5	1.2	27	15.8	2.5	63	16.8	1.9	1	15.7	.0	43N
41N	50	18.0	1.2	47	19.5	2.6	72	19.4	2.1	5	19.8	.8	41N
39N	58	20.7	1.8	131	19.9	2.0	82	21.2	1.0	34	20.5	.9	39N
37N	33	22.7	1.7	67	21.3	1.5	41	22.4	1.0	44	21.2	.9	37N
35N	35	23.3	1.7	22	23.6	1.3	89	23.8	.7	34	22.0	1.0	35N
33N	50	24.8	1.2	32	24.5	.8	72	24.4	.8	14	23.1	2.4	33N
31N	49	26.1	.8	35	25.2	.9	87	24.9	.7	47	23.4	.6	31N
29N	61	26.7	.9	31	25.7	.8	97	25.5	.7	1472	22.8	.9	29N
27N	126	27.1	.8	40	26.5	.8	133	25.9	.8	132	24.0	.9	27N
25N	78	27.2	.7	90	26.7	.5	188	25.9	.9	120	24.7	.8	25N

MONTH OCT DEPTH 0 METERS NUMBER OF OBSERVATIONS 7023 TABLE 1 10  
175M 165M 155M 145M

53N	5	7.0	.5	23	7.2	1.3	30	8.4	1.6	7	9.4	1.8	53N
51N	39	8.8	1.0	13	7.6	.5	23	8.7	1.4	9	9.2	2.3	51N
49N	54	8.5	1.4	80	9.5	1.7	19	9.2	1.0	1503	11.0	1.4	49N
47N	125	9.2	.8	10	10.0	1.6	20	10.2	1.5	5	11.5	1.7	47N
45N	74	10.9	.9	15	12.2	2.3	30	12.2	1.8	11	13.1	.4	45N
43N	85	12.8	1.0	42	13.4	1.1	70	14.7	2.0	14	14.0	1.1	43N
41N	65	13.3	1.1	50	16.1	1.1	40	15.7	1.7	48	17.0	1.0	41N
39N	115	17.7	.9	19	17.8	1.8	27	18.2	1.9	79	19.0	1.6	39N
37N	56	17.7	2.1	19	19.7	2.0	35	19.4	1.6	68	20.0	1.1	37N
35N	65	21.2	1.9	27	20.9	1.5	16	21.7	1.4	75	21.1	.8	35N
33N	76	22.8	1.1	33	22.5	1.5	28	23.1	1.0	97	22.2	.7	33N
31N	68	24.2	1.3	25	24.3	.8	43	23.8	.7	93	22.5	.7	31N
29N	75	25.5	1.0	52	25.2	.6	44	24.5	.7	2353	22.1	.8	29N
27N	249	26.6	1.9	14	25.7	.3	80	24.9	.7	173	23.3	1.0	27N
25N	75	26.8	.8	58	26.1	1.0	120	25.5	.9	149	24.8	.9	25N

MONTH NOV DEPTH 0 METERS NUMBER OF OBSERVATIONS 4929 TABLE 1 11  
175W 165W 155W 145W

53N	2	3.8	.0	3	6.1	.1	12	6.6	.6	5	7.7	.5	53N
51N	4	7.9	.4	3	5.9	.1	10	7.1	1.2	3	9.7	.2	51N
49N	28	7.8	.4	13	7.5	.9	11	7.6	1.1	1319	8.1	1.1	49N
47N	104	7.6	.5	10	9.0	.4	12	8.9	1.2	9	10.4	.5	47N
45N	25	8.3	1.0	13	9.9	.8	16	9.7	.8	10	10.9	1.0	45N
43N	29	11.2	.5	6	10.9	.5	88	10.7	.9	9	12.9	1.6	43N
41N	24	12.4	.9	7	12.5	1.1	63	11.9	1.6	6	14.3	1.4	41N
39N	197	15.9	1.4	15	15.1	1.3	12	15.9	1.6	19	15.8	1.4	39N
37N	71	16.4	.8	4	16.9	.9	14	17.7	1.8	12	17.4	1.2	37N
35N	8	17.4	2.1	5	18.9	1.4	24	18.6	1.1	29	18.6	1.2	35N
33N	24	20.0	.8	12	20.1	.7	21	20.3	1.2	18	19.7	1.2	33N
31N	38	20.7	1.3	25	21.3	1.1	28	22.0	1.0	56	21.1	.7	31N
29N	45	22.6	1.2	21	22.8	1.0	64	23.3	.9	1500	21.6	.9	29N
27N	124	24.1	.9	26	24.3	.7	109	24.1	.9	114	22.6	.9	27N
25N	84	25.1	1.1	135	24.9	.7	104	24.4	.9	107	23.4	1.0	25N

MONTH DEC DEPTH 0 METERS NUMBER OF OBSERVATIONS 3577 TABLE 1 12  
175W 165W 155W 145W

53N	0	0	0	0	0	0	5	4.9	.6	0	0	0	53N
51N	1	6.2	0	9	5.5	.3	4	5.2	.5	0	0	0	51N
49N	3	5.4	.4	16	5.6	.4	9	5.8	.4	1395	6.3	.7	49N
47N	31	6.9	.7	4	6.2	.5	10	7.1	.9	2	7.4	.5	47N
45N	11	6.1	1.1	4	7.8	.4	4	9.1	1.0	2	10.5	0	45N
43N	32	9.5	.5	4	7.5	.7	24	10.3	.5	1	8.9	0	43N
41N	11	10.2	1.0	38	10.7	.7	33	11.3	1.0	16	13.7	1.0	41N
39N	8	13.0	.8	4	12.2	1.1	2	14.0	2.0	8	14.3	1.1	39N
37N	10	12.2	1.2	4	12.4	.9	3	15.2	1.4	11	16.0	.9	37N
35N	10	14.6	1.6	4	13.9	.6	4	17.5	.8	11	17.6	.7	35N
33N	7	16.2	2.2	10	16.8	1.4	13	17.9	1.5	12	18.4	.8	33N
31N	29	18.5	1.3	8	19.7	1.5	13	19.9	.9	82	19.5	1.0	31N
29N	25	21.3	1.1	15	21.1	1.0	26	22.2	.9	1250	20.1	.8	29N
27N	32	22.9	1.3	21	22.3	.9	63	23.1	.6	56	21.5	.6	27N
25N	19	24.2	.7	21	23.3	1.4	63	23.4	.7	64	22.4	.6	25N



MONTH JAN DEPTH 30 METERS NUMBER OF OBSERVATIONS 4517 TABLE 2 1  
1954 1954 1954

53N	0	0	5	4.1	.4	17	3.3	.4	15	4.7	.9	53N	
51N	3	4.2	.4	5	4.0	.5	15	3.9	.5	7	5.9	.5	51N
49N	5	4.0	.2	20	4.1	.4	14	4.6	.4	1536	5.6	.5	49N
47N	125	5.1	.6	4	5.3	.2	14	5.8	.6	1	7.9	0	47N
45N	24	5.5	.4	4	6.3	.4	13	7.3	.4	13	8.1	.4	45N
43N	9	7.6	1.0	3	8.6	1.2	20	8.8	.4	6	9.0	.5	43N
41N	19	9.0	.7	12	10.1	1.1	17	9.9	1.2	5	10.8	.4	41N
39N	164	11.3	.9	7	11.5	.6	13	12.0	1.0	2	12.4	.3	39N
37N	14	14.1	.6	11	13.4	1.4	12	13.8	1.0	9	14.0	.7	37N
35N	7	14.5	.8	10	14.0	1.2	94	15.0	.4	12	15.7	.7	35N
33N	11	16.0	1.5	15	16.6	1.4	50	16.0	.4	16	16.7	1.0	33N
31N	39	17.8	1.0	13	17.2	1.4	25	18.4	.9	213	18.6	.5	31N
29N	17	19.5	1.0	12	19.1	1.4	27	19.5	1.0	1145	19.2	1.0	29N
27N	59	21.0	1.2	37	21.3	1.0	111	21.5	1.1	121	20.5	.4	27N
25N	51	22.2	1.1	38	21.9	1.1	116	22.1	.4	115	21.5	.6	25N

MONTH FEB DEPTH 30 METERS NUMBER OF OBSERVATIONS 4921 TABLE 2 2  
1954 1954 1954

53N	11	2.9	.3	23	3.4	.5	19	3.4	.5	24	4.2	.6	53N
51N	46	3.4	.2	55	3.4	.3	11	3.9	.3	15	5.2	.5	51N
49N	24	3.5	.4	74	3.9	.5	11	4.3	.4	1352	5.3	.6	49N
47N	35	4.4	.4	35	5.0	.5	9	5.7	1.2	14	6.4	.5	47N
45N	49	4.6	.6	21	6.7	.6	12	6.9	.9	5	7.8	.8	45N
43N	12	7.5	1.7	10	8.2	.9	12	8.5	.6	11	8.8	.7	43N
41N	34	8.8	1.1	12	9.8	.9	8	9.9	1.2	34	10.3	.6	41N
39N	30	11.1	.9	14	10.9	.7	7	10.8	1.0	22	11.9	1.1	39N
37N	40	12.9	.9	19	12.4	1.0	25	12.4	.4	30	13.5	.8	37N
35N	8	13.9	1.1	5	12.8	.4	178	15.3	.7	26	14.7	1.0	35N
33N	16	15.3	1.2	12	19.4	.4	99	15.6	.4	37	16.3	.8	33N
31N	15	16.7	1.2	9	17.2	1.2	49	16.9	1.2	132	18.3	.7	31N
29N	23	18.2	.9	15	19.1	.9	50	18.0	1.0	1284	18.5	.4	29N
27N	47	19.9	1.6	17	20.2	.4	105	19.9	.4	187	19.9	.7	27N
25N	47	22.2	1.1	40	21.7	1.2	130	21.4	.7	210	20.8	.7	25N

MONTH MAR DEPTH 30 METERS NUMBER OF OBSERVATIONS 5219 TABLE 2 3  
175M 165M 155M 145M

53N	10	2.7 .3	18	2.6 .5	28	3.4 .6	13	3.8 .8	53N
51N	40	3.4 .3	5	3.2 .2	26	3.8 .4	4	4.0 .7	51N
49N	24	3.4 .3	4	3.7 .1	26	4.4 .5	1477	5.2 .6	49N
47N	63	4.0 .4	7	4.5 .6	18	5.3 .6	5	5.5 .4	47N
45N	25	5.3 .8	9	6.0 .9	6	6.5 .4	3	7.4 .8	45N
43N	66	8.9 .7	9	7.7 1.2	16	8.4 .9	5	8.4 .4	43N
41N	34	9.5 1.0	1	9.4 0	47	9.8 .8	8	10.1 .6	41N
39N	67	11.5 1.4	5	10.8 1.1	55	11.3 .8	4	11.7 .9	39N
37N	28	13.3 .9	7	12.6 .5	50	12.4 1.0	13	13.7 1.1	37N
35N	56	14.2 .6	14	13.5 .6	46	13.9 1.2	52	15.0 .8	35N
33N	82	15.0 .7	32	15.1 1.1	47	15.1 .9	46	16.0 1.1	33N
31N	71	16.1 1.1	50	17.2 1.2	58	16.4 1.3	60	17.6 1.0	31N
29N	62	18.0 .8	58	19.1 1.4	93	18.7 .8	1270	18.3 .7	29N
27N	77	20.0 1.3	66	20.8 1.3	133	19.7 1.0	136	19.7 .8	27N
25N	77	21.6 1.4	155	21.7 .9	145	21.3 .8	89	21.0 .7	25N

MONTH APR DEPTH 30 METERS NUMBER OF OBSERVATIONS 6098 TABLE 2 4  
175M 165M 155M 145M

53N	15	2.7 .3	43	3.2 .4	70	3.6 .8	39	4.6 .8	53N
51N	15	3.7 .5	24	3.6 .3	52	3.9 .5	36	4.7 .8	51N
49N	19	3.9 .3	38	4.1 .5	37	4.6 .7	1810	5.5 .5	49N
47N	114	4.5 .5	8	5.2 .5	27	5.7 .6	17	6.9 1.0	47N
45N	21	5.2 1.3	18	6.5 .8	30	7.0 1.0	32	7.9 .6	45N
43N	21	7.3 .7	31	8.1 .8	53	8.3 .7	41	9.3 1.0	43N
41N	21	9.3 .9	45	9.4 .8	42	9.2 .8	31	10.1 .7	41N
39N	48	12.3 1.1	54	11.4 1.0	12	11.2 .8	22	11.3 .7	39N
37N	41	14.0 1.3	41	12.8 .8	17	12.7 .7	17	13.5 1.4	37N
35N	37	15.3 .9	21	14.0 .8	17	15.0 1.6	41	14.8 .7	35N
33N	38	15.3 1.1	20	15.1 1.0	21	16.0 .8	43	15.9 .8	33N
31N	55	17.2 .9	32	17.5 1.1	20	18.1 1.7	61	17.5 .8	31N
29N	81	18.5 1.1	42	19.0 .9	68	19.3 1.3	1598	18.4 .8	29N
27N	124	20.1 1.4	88	20.6 1.2	84	20.4 .7	141	19.9 .9	27N
25N	64	21.9 1.1	166	21.4 .9	172	21.6 .8	102	20.9 .7	25N



MONTH MAY DEPTH 30 METERS NUMBER OF OBSERVATIONS 6494 TABLE 2 5  
175M 165M 155M 145M

53N	93	3.3 .6	102	4.2 .8	66	4.8 .8	88	5.8 .9	53N
51N	98	4.3 .5	104	4.6 .6	65	5.0 .7	51	5.9 .8	51N
49N	83	4.3 .6	70	4.7 .6	78	5.3 .6	2077	6.4 .7	49N
47N	110	5.1 .7	11	5.2 .7	72	6.2 .8	115	7.4 .7	47N
45N	22	6.0 1.1	24	7.3 .9	56	6.4 .5	35	8.5 .7	45N
43N	14	7.9 .8	7	9.0 1.7	38	8.1 .5	2	8.8 .9	43N
41N	5	10.7 .8	14	10.7 .7	25	9.5 1.2	3	11.1 .4	41N
39N	54	12.3 1.0	19	12.1 1.0	15	12.0 1.2	11	12.7 1.3	39N
37N	19	14.0 1.4	19	13.5 .7	18	13.4 1.0	25	14.6 1.5	37N
35N	24	15.1 1.0	17	14.9 1.2	31	14.7 1.1	56	15.6 1.1	35N
33N	36	17.0 1.9	18	16.3 1.3	13	16.7 1.2	69	17.1 1.2	33N
31N	18	18.1 1.6	24	17.9 1.4	15	18.8 1.1	59	18.1 1.0	31N
29N	95	18.8 1.1	14	20.3 1.2	25	20.4 .8	1418	18.9 1.0	29N
27N	235	20.6 1.1	25	21.4 1.2	35	21.6 .9	157	20.6 1.0	27N
25N	84	22.2 1.2	64	22.5 1.2	124	22.5 .7	150	21.7 .9	25N

MONTH JUN DEPTH 30 METERS NUMBER OF OBSERVATIONS 7496 TABLE 2 6  
175M 165M 155M 145M

53N	160	4.8 .7	187	4.9 1.0	170	6.8 1.1	68	7.1 1.0	53N
51N	376	4.9 .7	76	5.7 .9	100	6.3 .7	63	7.5 .8	51N
49N	103	5.4 .8	54	5.7 .7	69	6.6 .6	1889	7.9 .9	49N
47N	111	6.2 .7	19	6.8 1.3	70	7.4 .8	37	8.6 1.1	47N
45N	39	7.0 .9	27	7.9 .8	52	8.5 .9	77	10.1 1.1	45N
43N	87	8.6 .7	28	9.7 .9	61	9.6 .9	54	10.6 1.1	43N
41N	32	10.9 .9	47	10.9 1.4	58	10.8 1.2	81	12.1 1.2	41N
39N	50	13.5 1.0	30	13.3 1.0	48	13.2 1.2	70	13.7 1.0	39N
37N	19	15.9 1.5	30	14.6 1.0	10	14.8 .8	33	14.8 1.1	37N
35N	8	16.5 1.3	23	16.3 .9	17	16.3 1.5	29	16.4 1.2	35N
33N	15	18.0 1.6	41	17.9 1.1	18	18.0 1.1	50	18.3 1.1	33N
31N	26	19.4 1.4	39	19.5 1.5	18	20.7 1.1	37	19.7 1.1	31N
29N	88	19.6 1.5	46	21.8 1.4	32	21.1 .7	1617	20.1 1.0	29N
27N	173	22.1 1.8	36	22.2 1.3	21	22.4 .9	205	21.6 1.0	27N
25N	98	24.1 1.8	85	23.3 1.3	100	23.4 .8	169	22.5 .8	25N

MONTH JUL DEPTH 30 METERS NUMBER OF OBSERVATIONS 7710 TABLE 2 7  
175W 165W 155W 145W

53N	144	6.3 .8	192	6.6 1.5	239	7.8 1.5	43	8.5 1.4	53N
51N	412	6.0 1.1	174	7.7 1.3	126	8.3 1.3	73	9.1 1.2	51N
49N	238	6.9 1.0	119	8.0 1.2	80	8.2 1.2	1991	9.6 1.1	49N
47N	64	7.3 .8	42	8.6 1.1	38	8.9 .9	40	10.0 1.1	47N
45N	9	8.0 .7	20	8.7 1.2	38	10.2 1.2	60	11.8 1.1	45N
43N	5	9.2 1.0	16	11.2 1.1	83	11.6 1.1	53	12.3 1.2	43N
41N	130	10.4 1.3	18	12.0 .6	112	12.7 1.3	63	13.8 1.7	41N
39N	96	17.6 2.1	107	15.7 2.2	90	15.1 1.7	80	15.4 1.5	39N
37N	15	17.3 1.1	30	16.4 1.9	34	16.0 1.3	81	16.4 1.5	37N
35N	6	17.6 1.0	18	18.4 2.3	35	16.9 1.5	38	17.8 1.6	35N
33N	6	19.0 1.1	27	19.3 1.8	34	19.1 1.8	39	19.7 1.9	33N
31N	20	22.3 1.5	14	20.3 1.6	35	21.6 1.3	57	21.1 1.5	31N
29N	44	23.2 1.5	5	22.1 2.0	48	23.2 1.3	1318	21.1 1.8	29N
27N	101	24.8 1.5	8	24.9 1.2	105	24.0 .7	146	22.6 .9	27N
25N	56	25.6 1.2	39	25.3 1.2	170	24.3 .8	166	23.3 .8	25N

MONTH AUG DEPTH 30 METERS NUMBER OF OBSERVATIONS 8709 TABLE 2 8  
175W 165W 155W 145W

53N	122	7.5 1.2	231	8.4 2.0	170	8.9 1.0	114	8.5 1.9	53N
51N	557	7.0 1.5	282	8.8 1.6	169	9.0 1.8	101	9.8 2.0	51N
49N	354	8.5 1.0	207	9.1 1.6	113	8.9 1.6	1762	11.5 1.4	49N
47N	231	9.4 1.4	57	10.2 1.5	103	9.4 1.6	29	12.0 1.4	47N
45N	93	9.9 1.4	98	11.6 1.9	73	11.0 1.3	67	12.0 1.2	45N
43N	50	11.8 1.3	30	13.1 2.1	91	12.6 1.7	60	12.8 1.3	43N
41N	93	14.5 1.6	27	15.4 2.3	77	13.7 1.5	67	14.8 1.6	41N
39N	110	17.6 2.5	78	17.0 2.1	86	15.9 2.2	67	16.1 2.3	39N
37N	91	19.4 2.1	17	16.6 1.4	43	17.8 1.6	50	18.7 2.6	37N
35N	13	20.9 1.9	9	21.0 1.9	69	19.3 1.8	54	20.8 1.8	35N
33N	19	21.6 2.4	23	21.9 2.2	49	21.9 2.3	16	20.3 1.7	33N
31N	16	22.9 1.6	16	22.9 1.7	53	23.7 1.5	49	21.9 .8	31N
29N	27	24.0 1.6	4	24.3 1.6	73	24.3 1.2	1515	21.9 1.0	29N
27N	85	25.8 1.2	10	24.9 2.1	115	25.8 1.2	202	22.9 1.2	27N
25N	52	26.5 .9	34	25.9 1.0	143	25.8 1.0	133	23.7 1.1	25N



MONTH SEP DEPTH 30 METERS NUMBER OF OBSERVATIONS 7345 TABLE 2 9  
1954 1954 1954

45N	45	7.7	1.3	124	8.7	1.7	72	9.8	1.8	27	11.0	1.7	53N
51N	123	7.8	1.0	107	9.0	1.4	90	10.4	.9	63	11.8	1.2	51N
49N	86	10.2	1.0	64	10.3	1.0	44	10.5	1.0	2215	12.4	1.2	49N
47N	79	11.0	1.3	37	11.6	1.7	42	11.7	1.3	31	12.9	1.2	47N
45N	58	12.7	1.5	53	12.1	1.3	37	12.3	1.3	16	12.3	.8	45N
43N	33	14.2	1.9	27	14.7	2.0	63	14.7	1.9	1	11.6	.0	43N
41N	55	16.0	2.2	47	16.0	1.4	72	16.6	2.1	5	19.1	.2	41N
39N	61	18.5	1.9	131	17.9	1.7	82	18.0	2.7	34	18.8	1.7	39N
37N	33	20.6	1.7	67	19.4	2.3	41	19.7	2.2	44	20.6	1.1	37N
35N	35	22.2	2.5	22	22.3	2.0	89	21.1	2.3	34	21.6	1.2	35N
33N	50	24.1	1.4	32	23.5	1.6	73	22.8	2.0	14	22.9	2.6	33N
31N	90	25.0	1.5	35	24.5	1.5	87	24.3	1.1	47	22.9	.8	31N
29N	61	25.8	1.3	31	25.5	.7	98	25.1	.8	1471	22.5	.8	29N
27N	126	26.4	.9	40	26.2	.8	133	25.7	.8	132	23.6	.9	27N
25N	79	26.9	.8	90	26.8	.7	187	25.8	.8	120	24.0	.8	25N

MONTH OCT DEPTH 30 METERS NUMBER OF OBSERVATIONS 7074 TABLE 2 10  
1954 1954 1954

53N	5	6.6	1.0	23	7.3	1.2	30	8.1	1.9	7	9.4	1.8	53N
51N	39	6.7	.9	13	7.7	.5	23	8.7	1.4	0	9.1	2.3	51N
49N	59	8.5	1.4	89	9.5	1.7	19	9.1	1.0	1552	11.0	1.0	49N
47N	126	9.1	.8	10	9.4	1.8	20	10.2	1.4	5	11.4	1.6	47N
45N	74	10.8	1.0	15	11.8	1.9	30	12.1	1.8	11	13.1	.5	45N
43N	85	12.9	.9	42	13.1	.9	70	14.0	1.8	14	14.4	1.0	43N
41N	65	13.2	1.2	50	15.6	1.4	80	15.5	1.7	48	17.1	.9	41N
39N	115	17.5	.9	19	17.5	2.0	27	18.2	1.9	79	19.0	1.6	39N
37N	56	17.6	2.0	19	19.5	2.1	35	19.2	1.5	66	20.0	1.1	37N
35N	65	20.9	1.9	27	20.8	1.5	16	21.6	1.4	75	21.2	.8	35N
33N	76	22.4	1.5	33	22.1	2.0	28	22.9	1.2	97	22.2	.7	33N
31N	84	24.1	1.4	25	24.2	.9	43	23.7	.7	93	22.5	.8	31N
29N	75	25.3	1.3	52	25.1	.8	44	24.5	.7	2353	22.0	.8	29N
27N	249	26.4	1.9	14	25.6	.3	80	24.8	.7	173	23.2	1.0	27N
25N	75	26.6	1.0	58	25.9	1.0	120	25.3	.9	149	24.2	.9	25N

MONTH NOV DEPTH 30 METERS NUMBER OF OBSERVATIONS 496A TABLE 2 11  
175M 165M 155M 145M

53N	2	3.8	.0	3	6.1	.1	12	6.6	.6	5	7.8	.5	53N
51N	4	7.8	.6	3	5.9	.0	10	7.2	1.1	3	9.7	.2	51N
49N	28	7.8	.4	13	7.5	.9	11	7.7	1.0	1358	8.1	1.1	49N
47N	104	7.6	.5	10	9.0	.6	12	8.9	1.2	9	10.3	.6	47N
45N	25	8.3	1.0	13	10.0	.8	16	9.6	.8	10	10.8	1.0	45N
43N	29	11.2	.5	6	11.0	.6	88	10.7	.9	9	12.9	1.5	43N
41N	48	12.4	.9	7	12.6	1.3	63	11.9	1.6	6	14.3	1.5	41N
39N	197	15.8	1.4	15	15.2	1.4	12	15.8	1.6	19	15.8	1.4	39N
37N	71	16.5	.7	4	17.0	.9	14	17.7	1.8	12	17.3	1.2	37N
35N	8	17.6	2.1	5	18.9	1.4	24	18.6	1.1	29	18.7	1.3	35N
33N	24	20.0	.8	12	20.1	.6	21	20.3	1.2	18	19.7	1.2	33N
31N	38	20.6	1.3	25	21.3	1.1	28	22.0	1.0	56	21.1	.7	31N
29N	46	22.6	1.2	21	22.8	1.0	64	23.2	.9	1497	21.5	.9	29N
27N	124	24.0	.9	26	24.3	.6	109	24.0	.9	114	22.6	.9	27N
25N	84	24.9	1.0	136	24.8	.7	105	24.3	.9	107	23.2	1.0	25N

MONTH DEC DEPTH 30 METERS NUMBER OF OBSERVATIONS 362B TABLE 2 12  
175M 165M 155M 145M

53N	0	0	0	0	0	0	5	5.0	.7	0	0	0	53N
51N	1	6.2	0	9	5.6	.3	4	5.3	.6	0	0	0	51N
49N	3	5.4	.6	16	5.6	.4	9	5.8	.6	1445	6.4	.7	49N
47N	31	6.9	.7	4	6.4	.4	10	7.1	.9	2	7.4	.5	47N
45N	11	6.2	1.1	4	7.7	.4	4	9.2	.9	2	10.5	0	45N
43N	32	9.5	.5	4	9.4	.7	24	10.1	.5	1	8.8	0	43N
41N	11	10.3	1.0	38	10.6	.6	33	11.2	1.1	16	13.7	1.0	41N
39N	8	13.0	.8	4	12.2	1.1	2	13.8	1.8	8	14.0	1.1	39N
37N	10	12.2	1.2	4	12.4	.9	3	14.2	1.4	11	16.1	.9	37N
35N	10	14.6	1.6	4	13.9	.5	4	17.6	.9	11	17.5	.6	35N
33N	7	16.2	2.1	10	16.7	1.4	13	17.9	1.6	12	18.5	.8	33N
31N	29	18.4	1.3	8	19.6	1.5	13	19.9	1.0	83	19.5	1.0	31N
29N	25	21.1	.9	15	21.1	1.0	26	22.2	.9	1250	20.0	.8	29N
27N	32	22.9	1.3	21	22.2	.9	63	23.0	.4	56	21.4	.6	27N
25N	19	24.2	.7	21	22.9	.9	63	23.4	.7	64	22.3	.6	25N



MONTH JAN DEPTH 60 METERS NUMBER OF OBSERVATIONS 4514 TABLE 3 1  
175M 165M 155M 145M

53N	0	0	5	4.3	.5	17	3.4	.4	15	4.7	.9	53N	
51N	3	4.2	.8	5	4.0	.5	15	3.9	.5	7	5.7	.6	51N
49N	5	4.0	.2	20	4.1	.4	14	4.6	.4	1533	5.6	.5	49N
47N	125	5.1	.6	4	5.3	.2	14	5.8	.6	1	7.3	.0	47N
45N	24	5.5	.8	4	6.3	.4	13	7.3	.4	13	8.1	.9	45N
43N	9	7.7	1.0	3	8.8	1.2	20	8.9	.8	6	9.0	.5	43N
41N	19	9.0	.7	12	10.2	1.0	17	9.9	1.2	5	10.7	.3	41N
39N	164	11.3	.9	7	11.5	.6	13	12.0	1.0	2	12.4	.3	39N
37N	14	14.0	.7	11	13.4	1.6	12	13.8	1.0	9	14.0	.8	37N
35N	7	14.5	.8	10	14.0	1.2	94	14.9	.6	12	15.6	.8	35N
33N	11	16.0	1.5	15	16.5	1.4	50	15.9	.9	16	16.7	1.0	33N
31N	39	17.7	1.0	13	17.2	1.4	25	18.1	.9	213	18.6	.5	31N
29N	17	19.2	1.0	12	18.9	1.4	27	19.3	1.0	1145	19.2	1.0	29N
27N	59	20.9	1.2	37	21.2	1.1	111	21.3	1.2	121	20.5	.8	27N
25N	51	22.1	1.1	38	21.8	1.2	116	22.0	.8	115	21.5	.6	25N

MONTH FEB DEPTH 60 METERS NUMBER OF OBSERVATIONS 4917 TABLE 3 2  
175M 165M 155M 145M

53N	11	2.9	.3	23	3.5	.5	19	3.4	.5	24	4.2	.6	53N
51N	46	3.4	.2	55	3.4	.3	11	3.9	.8	15	5.1	.8	51N
49N	28	3.5	.5	79	3.9	.5	10	4.2	.2	1352	5.3	.6	49N
47N	35	4.4	.4	35	5.0	.5	8	5.5	1.0	18	6.4	.6	47N
45N	49	4.7	.6	21	6.7	.6	11	6.9	.8	5	7.8	.8	45N
43N	12	7.5	1.7	10	8.2	.9	12	8.5	.5	11	8.8	.7	43N
41N	34	8.8	1.1	12	9.9	.8	8	10.0	1.3	33	10.3	.5	41N
39N	30	11.1	.9	14	10.9	.7	7	10.9	1.0	22	12.0	1.1	39N
37N	40	12.9	.8	19	12.3	1.0	25	12.4	.6	30	13.5	.8	37N
35N	8	13.9	1.1	5	12.8	.4	178	15.1	.7	26	14.7	1.0	35N
33N	16	15.2	1.2	12	15.3	.9	99	15.5	.8	37	16.3	.8	33N
31N	15	16.7	1.2	9	17.1	1.1	89	16.8	1.2	132	18.3	.7	31N
29N	23	18.0	.9	15	18.8	1.0	50	19.2	1.1	1286	18.5	.6	29N
27N	47	19.6	1.8	17	20.0	.8	105	19.7	.8	187	19.8	.7	27N
25N	47	21.7	1.0	40	21.8	1.1	130	21.3	.7	210	20.7	.8	25N

MONTH MAP DEPTH 60 METERS NUMBER OF OBSERVATIONS 5216 TABLE 3 3  
175W 165W 155W 145W

53N	10	2.7	.3	18	2.7	.4	28	3.4	.6	13	3.8	.8	53N
51N	40	3.5	.3	5	3.2	.2	26	3.8	.4	4	4.9	.8	51N
49N	24	3.4	.3	4	3.7	.1	26	4.4	.5	1477	5.1	.6	49N
47N	63	4.0	.4	7	4.6	.6	18	5.3	.6	5	5.5	.4	47N
45N	25	5.3	.7	9	6.0	.9	6	6.4	.3	3	7.4	.4	45N
43N	66	7.0	.8	9	7.7	1.2	16	8.4	1.0	5	8.4	.4	43N
41N	33	9.7	.9	1	9.5	0	47	9.8	.8	8	10.1	.6	41N
39N	67	11.4	1.4	5	10.8	1.1	55	11.3	.8	8	11.7	.8	39N
37N	28	13.3	.9	7	12.5	.4	54	12.4	.9	13	13.7	1.1	37N
35N	56	14.0	.5	14	13.3	.7	56	13.8	1.2	52	14.9	.9	35N
33N	82	14.9	.6	32	14.8	1.0	47	15.0	.9	46	16.0	1.2	33N
31N	71	16.0	1.2	50	16.8	1.1	58	16.2	1.4	60	17.6	1.0	31N
29N	62	17.6	.8	48	18.6	1.5	93	18.4	1.0	1270	18.3	.7	29N
27N	77	19.4	1.1	66	20.6	1.4	133	19.2	1.1	136	19.6	.7	27N
25N	77	21.0	1.4	155	21.4	1.0	145	21.0	.9	89	20.8	.8	25N

MONTH MAP DEPTH 60 METERS NUMBER OF OBSERVATIONS 6097 TABLE 3 4  
175W 165W 155W 145W

53N	15	2.7	.3	43	3.3	.4	70	3.5	.7	39	4.5	.8	53N
51N	15	3.6	.4	24	3.6	.2	52	3.8	.5	36	4.6	.9	51N
49N	19	3.8	.3	38	4.1	.4	37	4.5	.7	1810	5.4	.5	49N
47N	114	4.5	.5	8	5.2	.5	27	5.8	.7	17	6.8	1.0	47N
45N	21	5.1	1.3	18	6.4	.8	30	6.9	.9	32	7.8	.6	45N
43N	21	7.3	.7	31	8.0	.8	53	8.0	.7	41	9.1	.9	43N
41N	21	9.2	.8	45	9.2	.9	42	9.0	.9	31	9.9	.6	41N
39N	48	12.0	1.0	44	11.2	.9	12	11.1	.8	22	11.0	.6	39N
37N	41	13.9	1.3	41	12.6	.8	17	12.3	.7	17	13.4	1.4	37N
35N	37	15.1	1.0	21	13.7	.8	17	14.5	1.8	41	14.7	.7	35N
33N	38	15.1	1.2	20	14.5	1.0	21	15.5	.9	43	15.8	.9	33N
31N	55	16.8	.8	32	16.9	1.2	20	17.5	1.5	61	17.4	.8	31N
29N	81	17.8	1.0	42	18.5	.8	68	18.6	1.3	1597	18.3	.9	29N
27N	124	19.5	1.3	48	20.0	1.2	84	19.7	.9	141	19.6	.9	27N
25N	64	21.0	1.3	166	20.8	1.1	172	21.2	1.0	102	20.6	.7	25N



MONTH MAY DEPTH 60 METERS NUMBER OF OBSERVATIONS 6490 TABLE 3 5  
175M 165M 155M 145M

53N	53	3.1 .5	102	4.0 .6	46	4.2 .7	88	5.0 .8	53N
51N	97	4.0 .4	104	4.1 .6	65	4.5 .5	51	5.2 .7	51N
49N	83	4.0 .5	70	4.5 .5	78	4.7 .8	2077	5.8 .6	49N
47N	130	5.0 .6	11	5.1 .8	72	5.6 1.0	115	6.8 .8	47N
45N	22	5.7 1.2	24	7.2 .8	56	8.3 .6	35	7.9 .8	45N
43N	14	7.4 .7	7	8.5 1.5	38	7.6 .8	2	8.2 .7	43N
41N	5	9.9 .4	14	9.8 .9	25	9.2 1.3	3	9.9 .2	41N
39N	54	11.5 .9	19	11.8 1.0	15	11.3 .7	11	11.7 1.6	39N
37N	19	13.1 1.5	19	12.7 .6	18	12.7 .8	25	14.0 1.2	37N
35N	24	14.2 .9	17	13.6 1.2	31	14.1 1.0	54	14.8 .9	35N
33N	36	15.9 1.5	18	15.0 .8	13	16.1 1.3	69	16.1 1.0	33N
31N	18	16.7 1.2	24	16.3 1.0	15	17.5 1.3	59	17.5 1.1	31N
29N	95	17.7 .8	14	18.3 1.2	25	19.1 .7	1417	18.6 1.0	29N
27N	235	19.4 1.0	25	20.4 1.4	35	20.6 1.1	155	20.1 .9	27N
25N	84	20.9 1.3	64	20.9 1.3	124	21.8 .8	150	21.1 .8	25N

MONTH JUN DEPTH 60 METERS NUMBER OF OBSERVATIONS 7491 TABLE 3 6  
175M 165M 155M 145M

53N	160	3.9 .6	187	4.2 .7	170	4.6 .7	68	5.3 .7	53N
51N	376	4.3 .5	78	4.5 .6	100	4.5 .7	63	5.9 .8	51N
49N	143	4.2 .6	38	4.7 .8	69	4.7 .8	1889	6.3 .7	49N
47N	110	5.1 .7	19	6.1 1.0	70	6.1 .7	37	7.0 1.0	47N
45N	34	5.9 .7	27	7.2 .9	52	7.1 .9	77	8.4 .9	45N
43N	87	7.6 .9	28	8.8 .8	61	8.4 1.0	54	9.6 .7	43N
41N	32	10.5 .9	47	10.1 1.2	58	9.4 1.1	81	10.5 .7	41N
39N	50	12.0 .9	30	12.5 .8	48	11.8 1.2	70	12.3 .9	39N
37N	19	14.6 1.5	30	13.5 1.1	10	13.1 .6	33	13.3 1.0	37N
35N	8	14.5 1.1	23	14.8 .6	17	14.6 1.7	29	15.1 1.3	35N
33N	15	15.7 1.2	41	15.6 1.2	18	15.9 .6	50	16.6 1.3	33N
31N	26	17.0 1.3	39	17.3 1.3	18	18.7 1.0	36	18.5 .9	31N
29N	88	17.9 1.2	46	19.7 1.6	32	19.1 .7	1417	19.0 .9	29N
27N	172	19.9 1.5	36	20.5 1.1	21	20.9 1.0	205	20.3 .8	27N
25N	98	22.0 1.5	85	21.6 1.4	100	21.9 1.0	169	21.4 .8	25N

MONTH JUL DEPTH 60 METERS NUMBER OF OBSERVATIONS 7706 TABLE 3 7  
175M 165M 155M 145M

43N	144	4.3	.5	102	4.7	.7	238	4.5	.7	63	5.1	.9	43N
51N	412	4.7	.5	174	4.4	.6	125	4.9	.8	73	5.7	.7	51N
49N	238	4.6	.7	119	5.1	.8	79	5.4	.8	1990	6.3	.7	49N
47N	64	5.1	.7	42	6.0	.8	38	6.8	.7	40	7.4	.7	47N
45N	9	6.0	.5	20	6.5	.8	38	7.8	.8	60	8.8	1.1	45N
43N	5	6.3	.6	16	9.3	1.4	83	8.8	.8	53	9.2	.9	43N
41N	130	9.3	1.2	18	10.5	.8	112	10.7	1.3	63	10.6	1.2	41N
39N	96	15.2	1.0	107	12.9	1.2	90	12.6	1.0	80	12.4	1.2	39N
37N	15	14.3	.9	30	12.9	1.3	34	13.0	.9	81	13.6	1.3	37N
35N	6	15.3	1.5	18	14.5	1.1	35	14.0	.8	38	15.4	1.2	35N
33N	6	16.2	1.3	27	15.9	1.3	34	15.7	1.2	39	17.2	1.5	33N
31N	20	18.4	1.0	14	16.9	1.2	35	17.9	1.1	57	18.6	1.1	31N
29N	44	19.7	1.4	5	18.9	1.9	48	19.9	1.4	1318	19.6	1.3	29N
27N	101	21.2	1.3	8	21.6	1.9	105	21.2	.9	146	20.9	1.0	27N
25N	46	22.3	1.5	39	22.9	1.5	170	22.2	1.0	166	21.9	.9	25N

MONTH AUG DEPTH 60 METERS NUMBER OF OBSERVATIONS 7705 TABLE 3 8  
175M 165M 155M 145M

43N	122	4.2	.7	231	5.0	1.0	170	4.4	1.0	114	4.5	1.0	43N
51N	557	4.9	.7	282	4.6	.8	169	4.6	.9	101	5.4	1.3	51N
49N	354	4.5	.9	207	5.2	.9	112	4.9	.9	1742	6.4	.7	49N
47N	231	6.4	1.1	57	6.5	1.0	102	6.1	1.1	29	7.5	.8	47N
45N	93	7.1	1.2	98	7.7	1.1	73	7.3	.9	67	8.3	.9	45N
43N	50	9.1	1.3	30	8.9	1.5	91	8.7	.9	60	9.3	.8	43N
41N	93	11.2	.9	27	11.3	1.2	76	10.1	.8	67	10.5	.8	41N
39N	110	13.5	1.7	78	12.7	1.5	86	11.8	1.2	67	12.3	1.3	39N
37N	51	15.3	1.7	17	13.1	1.1	43	13.5	1.1	50	14.4	1.5	37N
35N	13	16.2	1.8	9	15.0	.9	69	14.6	1.1	54	16.2	1.2	35N
33N	19	16.8	1.7	23	16.9	1.2	49	16.8	1.7	18	16.8	.9	33N
31N	16	18.4	1.1	16	17.6	1.2	53	18.8	.7	49	19.6	1.3	31N
29N	27	19.1	1.6	4	19.9	1.5	73	19.5	1.3	1514	20.0	1.1	29N
27N	85	21.2	1.6	10	21.7	3.0	115	22.4	1.8	202	20.9	1.1	27N
25N	42	23.2	1.8	34	23.5	1.6	143	23.4	1.2	133	22.2	1.0	25N



MONTH SEP DEPTH 60 METERS NUMBER OF OBSERVATIONS 7340 TABLE 3 9  
175W 145W 155W 145W

53N	45	4.6	.9	124	5.5	1.1	72	4.6	1.0	27	5.2	1.3	53N
51N	123	5.3	1.0	107	4.7	.8	90	4.7	.8	63	5.9	.9	51N
49N	85	5.5	1.4	64	5.4	.8	44	5.5	.8	2215	6.5	1.0	49N
47N	70	6.0	1.2	37	6.3	.5	42	6.5	.8	31	7.9	1.5	47N
45N	58	7.4	1.4	53	7.2	.9	37	7.5	.9	16	8.3	1.0	45N
43N	33	9.5	1.4	27	10.2	1.9	63	9.4	.9	1	9.2	.0	43N
41N	45	11.6	1.3	47	10.9	1.2	72	11.1	1.2	5	13.0	.5	41N
39N	61	13.4	1.2	130	12.8	1.2	82	12.6	1.3	34	13.2	.9	39N
37N	33	15.5	1.3	67	14.1	1.1	41	14.0	1.2	44	15.1	1.1	37N
35N	35	16.1	1.4	22	16.0	1.2	49	15.2	1.0	34	16.0	1.5	35N
33N	50	17.7	1.7	32	17.1	1.3	73	16.8	1.1	14	18.3	2.4	33N
31N	50	18.6	1.2	35	19.1	1.3	47	19.0	1.3	47	19.5	1.1	31N
29N	61	20.1	1.4	31	20.8	1.5	98	20.9	1.5	1470	20.5	1.0	29N
27N	126	21.7	1.7	40	23.4	1.9	133	22.4	1.4	132	21.6	1.1	27N
25N	79	23.9	1.6	90	24.1	1.5	186	23.7	1.4	119	22.8	1.1	25N

MONTH OCT DEPTH 60 METERS NUMBER OF OBSERVATIONS 7067 TABLE 3 10  
175W 165W 155W 145W

53N	5	5.2	1.3	23	4.4	1.2	30	5.1	1.5	7	5.6	1.1	53N
51N	30	5.6	1.0	13	5.5	1.7	23	5.1	1.3	9	5.7	1.1	51N
49N	40	6.3	1.5	49	6.9	1.2	19	6.6	1.4	1552	7.5	1.8	49N
47N	126	7.4	1.4	10	6.7	1.5	20	7.4	1.4	5	8.5	1.6	47N
45N	78	7.6	1.7	15	7.3	1.3	29	8.7	1.4	11	9.2	1.0	45N
43N	85	9.7	1.5	42	10.1	1.3	70	10.8	1.3	14	10.8	1.7	43N
41N	65	12.4	1.4	50	11.3	2.1	40	11.4	1.5	48	15.1	2.0	41N
39N	115	14.7	1.5	19	12.9	1.1	27	13.6	1.4	79	14.6	1.1	39N
37N	56	15.7	1.2	19	14.1	1.2	35	14.7	1.1	66	15.4	1.2	37N
35N	65	17.1	1.6	27	15.8	1.3	16	16.0	1.2	75	16.7	1.0	35N
33N	76	17.8	1.5	33	16.9	1.8	28	17.7	1.0	97	18.4	1.4	33N
31N	64	19.8	1.4	25	19.0	1.5	43	19.8	1.7	93	19.6	1.4	31N
29N	74	20.7	2.0	52	20.3	1.5	44	22.0	1.5	2349	20.4	1.2	29N
27N	249	21.3	2.3	14	24.1	1.3	80	23.4	1.1	172	22.2	1.2	27N
25N	74	24.9	1.8	58	24.2	1.9	120	24.3	1.2	149	23.3	1.1	25N

MONTH NOV DEPTH 60 METERS NUMBER OF OBSERVATIONS 4966 TABLE 3 11  
175W 165W 155W 145W

53N	2	3.8 .0	3	6.1 .2	12	5.9 .5	5	6.8 1.1	53N
51N	4	7.7 .5	3	5.9 .0	10	5.9 1.1	3	7.1 1.1	51N
49N	28	7.4 1.3	13	6.7 1.1	11	6.9 1.1	135A	7.8 1.1	49N
47N	104	7.5 .5	10	8.5 1.0	12	7.9 1.0	9	8.3 1.5	47N
45N	25	7.0 1.4	13	8.5 2.1	16	9.0 1.2	10	9.9 1.2	45N
43N	29	11.1 .9	6	10.4 .6	88	10.3 1.1	9	11.5 1.3	43N
41N	44	12.1 1.1	7	11.7 .6	63	11.3 1.6	6	13.6 1.3	41N
39N	197	15.6 1.4	15	13.0 1.6	12	13.5 1.5	19	14.2 2.1	39N
37N	71	16.4 .7	4	14.7 1.8	14	15.1 1.6	12	16.0 1.1	37N
35N	8	17.1 1.7	5	16.6 1.3	24	16.4 1.3	29	17.6 1.3	35N
33N	24	19.8 .8	12	19.1 1.2	21	18.2 1.6	18	19.2 1.6	33N
31N	38	20.1 1.3	25	20.6 1.3	28	21.0 1.4	56	20.7 1.0	31N
29N	46	21.5 1.6	21	22.3 1.4	64	21.6 1.5	1495	21.3 1.0	29N
27N	124	23.2 1.4	26	23.9 .8	109	23.1 1.4	114	22.3 .9	27N
25N	84	24.3 1.2	136	24.2 1.0	105	23.9 .9	107	22.9 1.1	25N

MONTH DEC DEPTH 60 METERS NUMBER OF OBSERVATIONS 3627 TABLE 3 12  
175W 165W 155W 145W

53N	0	0 0	0	0 0	5	5.1 .8	0	0 0	53N
51N	1	6.3 0	9	5.6 .3	4	5.5 .6	0	0 0	51N
49N	5	5.4 .6	16	5.6 .4	9	5.9 .5	1445	6.4 .7	49N
47N	31	6.0 .7	4	6.5 1.0	10	7.1 .9	2	7.3 .4	47N
45N	11	6.2 1.1	4	7.7 .4	4	9.3 .7	2	10.5 0	45N
43N	32	9.5 .5	4	9.4 .7	24	10.0 .3	1	8.8 0	43N
41N	11	10.4 1.0	38	10.5 .6	33	11.1 1.0	16	13.4 1.5	41N
39N	8	13.0 .8	4	12.2 1.1	2	13.2 1.2	8	13.7 1.2	39N
37N	10	12.2 1.2	4	12.4 .9	3	15.1 1.4	11	15.9 1.0	37N
35N	10	14.5 1.6	4	13.8 .5	4	17.6 .9	11	17.4 .6	35N
33N	7	16.1 2.0	10	16.8 1.5	13	17.9 1.5	12	18.5 .9	33N
31N	29	18.3 1.3	8	19.6 1.5	13	19.8 1.0	83	19.5 1.0	31N
29N	25	20.7 1.9	15	21.0 1.1	26	22.1 .9	1249	20.0 .8	29N
27N	32	22.5 1.8	21	21.9 1.2	63	22.9 .7	56	21.4 .6	27N
25N	19	23.9 1.0	21	22.7 1.2	63	23.3 .7	64	22.2 .6	25N



MONTH JAN DEPTH 90 METERS NUMBER OF OBSERVATIONS 4513 TABLE 4 1  
175M 165M 155M 145M

53N	0	0	0	5	4.3	.5	17	3.6	.4	15	4.7	.4	53N
51N	3	4.2	.8	5	4.1	.4	15	4.0	.3	7	5.6	.6	51N
49N	5	4.1	.2	20	4.1	.3	14	4.6	.4	1533	5.5	.6	49N
47N	125	5.1	.6	4	5.2	.2	14	5.8	.6	1	7.3	.0	47N
45N	24	5.5	.8	4	6.3	.4	13	7.3	.4	13	8.0	.8	45N
43N	9	7.7	1.0	3	9.1	1.1	20	8.8	.8	6	8.9	.5	43N
41N	19	9.0	.7	12	10.2	.9	17	9.9	1.1	5	10.6	.3	41N
39N	164	11.3	1.0	7	11.4	.6	13	11.9	1.0	2	12.5	.2	39N
37N	14	14.0	.7	11	12.3	.5	12	13.0	.8	9	13.0	1.5	37N
35N	7	14.4	.8	10	13.4	1.0	94	14.2	.9	12	15.1	1.0	35N
33N	11	15.9	1.5	15	15.8	1.5	50	15.5	1.0	16	16.5	1.2	33N
31N	39	17.5	1.0	13	16.7	1.3	25	18.1	1.0	213	18.6	.6	31N
29N	17	18.1	1.2	12	18.6	1.5	27	18.9	1.0	1145	19.1	1.0	29N
27N	59	20.3	1.3	37	20.6	1.3	111	21.0	1.3	121	20.3	.8	27N
25N	51	21.7	1.2	38	21.5	1.3	115	21.8	.9	115	21.2	.7	25N

MONTH FEB DEPTH 90 METERS NUMBER OF OBSERVATIONS 4917 TABLE 4 2  
175M 165M 155M 145M

53N	11	3.0	.4	23	3.7	.5	19	3.5	.6	24	4.2	.6	53N
51N	46	3.5	.3	55	3.5	.3	11	3.9	.3	15	5.0	.4	51N
49N	24	3.6	.5	79	3.9	.5	30	4.1	.3	1352	5.2	.5	49N
47N	35	4.4	.4	35	5.0	.5	8	5.5	1.0	14	6.1	.6	47N
45N	49	4.7	.6	21	6.8	.6	11	6.9	.8	5	7.8	.8	45N
43N	12	7.5	1.8	10	8.3	.8	12	8.5	.6	11	8.7	.6	43N
41N	34	8.8	1.1	12	9.9	.8	8	9.9	1.2	33	10.3	.5	41N
39N	30	11.0	.8	14	10.9	.6	7	10.7	.7	22	11.9	1.1	39N
37N	40	12.8	.8	19	12.3	1.0	25	12.3	.5	30	13.3	.9	37N
35N	8	13.8	1.0	5	12.8	.4	178	14.7	.8	26	14.6	1.0	35N
33N	16	15.1	1.3	12	15.1	1.0	99	15.0	1.0	37	16.3	.8	33N
31N	15	16.5	1.2	9	16.8	1.3	49	16.7	1.3	132	18.3	.7	31N
29N	23	17.8	.9	15	18.5	1.1	50	18.1	1.1	1286	18.4	.6	29N
27N	47	19.0	1.3	17	19.6	1.0	105	19.5	.8	187	19.7	.7	27N
25N	47	21.1	1.0	40	21.0	1.2	130	21.1	.7	210	20.6	.8	25N

MONTH APR DEPTH 90 METERS NUMBER OF OBSERVATIONS 521A TABLE 4 3  
175W 165W 155W 145W

53N	10	2.7 .3	18	3.1 .5	28	3.4 .4	13	3.8 .7	53N
51N	40	3.5 .3	5	3.3 .3	26	3.8 .4	4	4.8 .8	51N
49N	24	3.4 .3	4	3.8 .1	26	4.3 .5	1477	5.0 .5	49N
47N	63	3.9 .4	7	4.7 .5	18	5.2 .5	5	5.4 .4	47N
45N	25	4.3 .7	9	6.0 .9	6	6.4 .4	3	7.4 .5	45N
43N	66	7.0 .8	9	7.7 1.3	16	8.3 1.0	5	8.4 .4	43N
41N	33	9.6 .8	1	9.5 0	47	9.6 1.0	8	10.0 .6	41N
39N	67	11.3 1.4	5	10.7 1.2	55	11.2 .9	8	11.4 .7	39N
37N	28	13.1 .9	7	12.4 .4	54	12.2 .8	13	13.5 1.1	37N
35N	56	13.9 .5	14	13.1 .7	56	13.6 1.2	52	14.8 1.0	35N
33N	82	14.7 .7	32	14.5 1.0	47	14.8 .9	46	15.9 1.2	33N
31N	71	15.8 1.2	50	16.4 1.1	58	16.0 1.4	60	17.5 1.0	31N
29N	62	17.3 .9	58	17.9 1.5	93	18.0 1.1	1270	18.2 .7	29N
27N	77	18.8 1.1	66	20.1 1.4	133	18.6 1.1	136	19.4 .7	27N
25N	77	20.3 1.3	155	21.0 1.1	145	20.5 1.0	89	20.5 .8	25N

MONTH APR DEPTH 90 METERS NUMBER OF OBSERVATIONS 6093 TABLE 4 4  
175W 165W 155W 145W

53N	15	2.7 .3	43	3.4 .4	70	3.6 .7	39	4.3 .8	53N
51N	15	3.6 .5	24	3.7 .3	52	3.8 .5	36	4.4 .8	51N
49N	19	3.7 .2	37	4.0 .3	37	4.4 .7	1810	5.3 .5	49N
47N	114	4.5 .5	8	5.2 .6	27	5.5 .7	17	6.6 .9	47N
45N	21	5.1 1.3	18	6.4 .9	30	6.6 .8	32	7.6 .7	45N
43N	21	7.4 .6	31	7.9 .9	53	8.0 .8	41	9.0 .9	43N
41N	21	9.2 .8	45	9.1 1.0	42	8.8 1.0	31	9.7 .5	41N
39N	48	11.7 1.0	54	11.1 .8	12	10.9 .9	22	10.7 .7	39N
37N	41	13.5 1.2	41	12.3 .7	17	12.0 .9	17	13.1 1.6	37N
35N	37	14.7 1.1	21	13.3 .8	17	14.1 1.9	41	14.6 .8	35N
33N	38	14.8 1.3	20	14.3 1.1	20	15.1 1.2	43	15.7 1.1	33N
31N	55	16.3 .8	32	16.3 1.1	19	17.0 1.5	61	17.3 .7	31N
29N	81	17.2 .9	42	17.9 .9	68	18.0 1.2	1507	18.1 1.0	29N
27N	124	18.6 1.3	88	19.4 1.3	84	19.0 1.1	141	19.2 .8	27N
25N	64	20.6 1.4	165	20.0 1.2	172	20.6 1.1	102	20.3 .8	25N



MONTH MAY DEPTH 90 METERS NUMBER OF OBSERVATIONS 6486 TABLE 4 5  
175M 165M 155M 145M

43N	53	3.0 .5	101	3.9 .6	65	4.1 .7	48	4.5 .6	53N
51N	97	3.9 .4	103	3.8 .5	65	4.2 .5	51	4.7 .6	51N
49N	43	3.7 .4	70	4.1 .4	74	4.3 .7	2077	5.4 .6	49N
47N	130	4.6 .5	11	4.8 .6	72	5.3 .9	115	6.3 .8	47N
45N	22	5.8 1.2	20	6.5 .7	56	5.9 .4	35	7.8 .8	45N
43N	14	7.1 .7	7	8.0 1.4	38	7.2 .7	2	7.7 .4	43N
41N	5	9.8 .6	14	9.7 .8	25	9.1 1.3	3	9.6 .4	41N
39N	54	11.1 .8	19	10.9 1.0	15	11.1 .6	11	11.4 1.7	39N
37N	19	12.5 1.6	19	12.2 .7	18	12.2 .4	25	13.5 1.2	37N
35N	24	13.6 .9	17	13.1 1.1	31	13.4 1.1	56	14.4 1.0	35N
33N	36	15.2 1.4	18	14.2 .8	13	15.4 1.6	68	15.5 1.1	33N
31N	18	15.8 1.1	24	15.5 .9	15	16.5 1.4	50	17.0 1.2	31N
29N	95	16.8 .7	14	17.0 1.2	25	18.3 .8	1417	18.1 1.1	29N
27N	235	18.2 .9	25	18.9 1.5	35	19.4 .9	155	19.5 .8	27N
25N	44	19.6 1.4	60	19.6 1.4	124	20.9 .9	150	20.6 .8	25N

MONTH JUN DEPTH 90 METERS NUMBER OF OBSERVATIONS 7480 TABLE 4 6  
175M 165M 155M 145M

53N	160	3.4 .5	183	3.9 .7	170	4.3 .6	68	4.7 .4	53N
51N	375	4.0 .5	74	4.3 .5	100	4.0 .5	63	5.1 .7	51N
49N	143	3.7 .4	36	4.2 .4	69	4.0 .4	1889	5.4 .5	49N
47N	110	4.2 .6	18	5.5 .9	70	5.3 .7	37	6.2 .8	47N
45N	39	5.2 .9	27	6.5 .8	52	6.4 1.0	77	7.7 1.2	45N
43N	87	6.9 1.0	28	8.3 .9	61	7.6 1.0	54	8.7 .9	43N
41N	32	9.9 .9	47	9.4 1.3	58	8.9 1.0	81	10.1 .9	41N
39N	50	11.1 .9	30	11.7 .8	48	10.9 1.1	70	11.4 1.0	39N
37N	19	13.8 1.4	30	12.6 .8	10	12.4 .5	33	12.5 1.2	37N
35N	8	13.8 .9	23	13.9 .5	17	13.6 1.4	29	14.4 1.2	35N
33N	15	15.0 1.2	40	14.4 1.0	18	14.8 .6	50	15.8 1.1	33N
31N	26	16.0 1.1	39	16.1 1.2	18	17.7 1.0	36	17.8 1.0	31N
29N	88	16.9 1.0	46	18.5 1.7	32	18.2 .7	1617	18.3 .8	29N
27N	172	18.4 1.3	36	19.3 1.0	21	19.8 1.0	204	19.4 .7	27N
25N	93	20.5 1.4	85	20.4 1.4	100	20.8 1.1	169	20.5 .9	25N

MONTH JUL DEPTH 90 METERS NUMBER OF OBSERVATIONS 7701 TABLE 4 7  
1954 1954 1954 1954

53N	144	3.7	.5	190	4.3	.7	238	4.0	.6	62	4.4	.7	53N
51N	412	4.3	.6	174	3.8	.5	125	4.1	.6	73	4.7	.6	51N
49N	238	3.8	.5	119	4.2	.6	79	4.5	.7	1990	5.3	.6	49N
47N	64	4.1	.7	42	5.2	1.0	38	6.0	.6	40	6.4	.7	47N
45N	9	5.2	.8	20	5.0	.7	38	6.9	.6	60	7.9	.9	45N
43N	5	5.7	.4	16	8.7	1.5	83	8.1	1.0	53	8.8	.9	43N
41N	130	8.0	1.1	18	10.0	.7	112	9.4	1.1	63	9.8	1.0	41N
39N	94	13.7	1.6	107	11.0	1.0	90	11.6	.7	80	11.5	1.2	39N
37N	15	13.3	1.0	30	11.9	1.1	33	12.0	.7	81	12.5	1.5	37N
35N	6	14.3	1.2	18	13.5	1.0	35	13.0	.6	38	14.4	1.3	35N
33N	6	15.3	1.2	27	14.6	1.2	33	14.5	1.2	39	16.1	1.6	33N
31N	20	16.6	.8	14	15.4	1.1	35	16.4	1.1	57	17.6	.9	31N
29N	44	17.9	1.3	5	17.2	1.2	48	18.2	1.3	1318	18.5	1.2	29N
27N	101	19.3	1.2	8	20.0	1.9	105	19.6	.9	146	19.7	.9	27N
25N	56	20.5	1.4	39	21.0	1.6	170	20.8	.9	164	20.6	.7	25N

MONTH AUG DEPTH 90 METERS NUMBER OF OBSERVATIONS 8696 TABLE 4 8  
1954 1954 1954 1954

53N	122	3.6	.7	230	4.5	.9	170	4.1	.8	114	4.0	.9	53N
51N	556	4.4	.7	282	3.9	.6	169	3.9	.6	100	4.6	1.1	51N
49N	354	3.7	.7	207	4.2	.8	112	4.1	.7	1762	5.3	.5	49N
47N	231	5.3	1.0	54	5.8	1.0	101	5.4	1.0	29	6.5	.8	47N
45N	93	6.3	1.2	98	6.7	.9	73	6.5	.8	67	7.2	.7	45N
43N	50	8.6	1.4	30	8.1	1.6	91	8.0	.9	60	8.2	.7	43N
41N	93	10.3	.9	27	10.5	1.2	75	9.5	.9	67	9.5	.8	41N
39N	110	12.4	1.3	78	11.6	1.2	85	10.8	.9	67	10.7	1.2	39N
37N	51	13.9	1.6	17	12.0	1.0	42	12.4	.8	50	12.5	1.3	37N
35N	13	14.6	1.6	9	13.6	.8	69	13.3	.9	54	14.7	1.2	35N
33N	18	15.3	1.6	23	15.1	1.1	89	15.3	1.6	16	15.7	.5	33N
31N	16	16.8	.7	16	15.8	1.0	53	17.2	.8	49	17.8	.6	31N
29N	27	17.0	1.5	4	17.8	.8	73	17.5	.9	1918	18.5	.8	29N
27N	85	19.3	1.5	10	19.6	2.8	115	20.4	1.5	202	19.4	.9	27N
25N	92	21.1	1.6	34	21.3	1.5	143	21.3	1.0	133	20.5	.9	25N



MONTH SEP DEPTH 90 METERS NUMBER OF OBSERVATIONS 7330 TABLE 4 9  
175W 165W 155W 145W

53N	45	3.0	.9	124	4.8	1.0	72	4.2	.9	27	4.4	1.1	53N
51N	123	4.7	.9	107	3.9	.6	90	4.0	.4	63	4.7	.7	51N
49N	85	4.5	1.0	64	4.3	.6	43	4.7	.6	2215	5.1	.6	49N
47N	79	5.1	1.1	37	5.4	.5	41	5.8	.6	31	4.6	.7	47N
45N	58	6.4	1.3	53	6.2	.7	37	6.9	.7	16	7.1	1.0	45N
43N	33	8.8	1.5	27	8.5	1.2	63	8.4	.6	1	8.1	0	43N
41N	55	10.6	1.1	47	9.9	.9	72	10.0	1.0	5	11.3	.6	41N
39N	61	12.2	1.0	130	11.8	1.1	82	11.5	.8	34	12.1	.9	39N
37N	33	14.0	.9	67	12.8	.7	41	12.4	.8	43	13.4	1.1	37N
35N	35	14.4	1.0	22	13.9	.7	89	13.4	.9	34	14.3	1.4	35N
33N	89	15.5	1.2	31	14.7	1.0	73	14.9	1.1	14	17.0	2.0	33N
31N	49	16.5	.8	35	16.6	1.1	87	16.6	1.0	47	17.8	.8	31N
29N	60	17.8	1.2	31	18.0	1.2	98	18.2	1.0	1470	18.4	.7	29N
27N	125	19.1	1.4	40	20.5	1.4	133	19.9	1.4	132	19.7	.9	27N
25N	79	21.2	1.5	90	21.5	1.4	145	21.3	1.2	118	20.8	.9	25N

MONTH OCT DEPTH 90 METERS NUMBER OF OBSERVATIONS 7061 TABLE 4 10  
175W 165W 155W 145W

53N	5	4.3	.6	22	4.6	.7	30	3.9	.7	7	4.2	.4	53N
51N	38	4.7	.9	13	3.9	.5	23	4.0	.7	9	4.4	.6	51N
49N	59	4.1	1.0	84	4.5	1.1	18	4.5	.9	1552	5.1	.7	49N
47N	126	4.4	.6	10	4.7	.6	20	5.4	.7	5	6.1	.3	47N
45N	74	5.8	1.2	15	5.9	1.2	29	6.9	1.0	11	7.7	.6	45N
43N	85	8.3	1.0	42	9.0	1.0	70	9.2	1.1	14	8.8	.8	43N
41N	65	10.3	.9	50	9.7	1.4	40	9.8	1.0	48	11.3	.8	41N
39N	115	13.0	1.0	19	11.6	.6	27	11.8	.9	79	12.4	.9	39N
37N	56	13.3	1.2	19	12.5	.6	35	12.8	.8	66	13.2	1.0	37N
35N	65	14.4	1.3	27	13.6	.8	16	13.7	.9	75	14.8	1.0	35N
33N	76	15.3	.9	33	14.4	1.3	28	15.8	1.1	97	16.4	1.0	33N
31N	64	16.9	.8	25	16.2	.9	43	17.3	1.2	43	17.8	.9	31N
29N	74	17.7	1.2	52	17.5	1.3	44	19.0	1.0	2349	18.3	.7	29N
27N	248	17.8	2.1	14	20.7	1.0	80	20.6	.8	171	19.6	1.0	27N
25N	75	21.8	1.7	58	21.8	1.8	120	21.4	1.1	149	20.9	.9	25N

MONTH NOV DEPTH 90 METERS NUMBER OF OBSERVATIONS 4964 TABLE 4 11  
175W 165W 155W 145W

53N	2	3.8	.0	3	6.0	.3	12	4.7	.9	5	5.2	1.2	53N
51N	4	6.3	.5	3	4.9	.7	10	4.3	.8	3	4.4	.1	51N
49N	28	4.7	1.7	13	4.2	.9	11	4.7	.9	1358	5.5	1.0	49N
47N	100	6.7	.8	10	5.0	.8	12	5.6	1.1	9	5.9	.6	47N
45N	25	6.1	1.2	13	6.6	1.1	16	6.6	.6	10	7.8	.9	45N
43N	29	10.7	1.3	6	8.2	.9	88	8.2	.6	9	9.1	.7	43N
41N	44	10.8	1.0	7	10.7	.7	62	9.1	1.1	5	9.9	.7	41N
39N	197	13.3	1.1	15	11.2	.7	12	11.2	.6	19	10.7	.8	39N
37N	71	14.5	.9	4	12.7	1.4	14	12.8	.8	12	12.6	1.0	37N
35N	8	15.6	1.8	5	13.6	.9	24	13.3	.9	29	14.7	1.4	35N
33N	20	17.2	.9	12	15.1	.7	21	14.8	.7	15	16.7	1.7	33N
31N	38	17.1	1.2	25	16.5	.9	28	17.5	1.2	56	17.9	1.1	31N
29N	46	18.3	1.7	21	18.2	1.7	64	18.6	1.2	1495	18.8	1.2	29N
27N	124	19.7	1.6	26	20.3	1.2	109	20.3	1.3	114	20.0	1.1	27N
25N	80	21.5	1.6	136	21.8	1.7	105	21.4	1.0	197	20.9	1.2	25N

MONTH DEC DEPTH 90 METERS NUMBER OF OBSERVATIONS 3627 TABLE 4 12  
175W 165W 155W 145W

53N	0	0	0	0	0	0	5	4.1	.8	0	0	0	53N
51N	1	6.4	0	9	4.7	.6	4	3.9	.9	0	0	0	51N
49N	3	5.4	.6	16	4.9	.6	9	4.9	.7	1445	6.0	.8	49N
47N	31	6.8	.7	4	6.4	1.0	10	6.5	1.3	2	7.1	.3	47N
45N	11	6.1	1.0	4	7.6	.4	4	8.1	.5	2	7.5	.2	45N
43N	32	9.5	.5	4	9.3	.7	24	9.6	.4	1	8.3	0	43N
41N	11	10.3	1.0	38	10.1	.9	33	10.1	.8	16	10.9	1.2	41N
39N	8	12.8	.7	4	12.1	1.1	2	12.2	.4	8	12.9	1.6	39N
37N	10	12.1	1.3	4	12.3	.9	3	13.0	.2	11	14.6	1.3	37N
35N	10	14.1	1.3	4	13.7	.6	4	15.6	1.0	11	16.3	1.4	35N
33N	7	15.8	2.0	10	15.1	.7	13	16.2	.9	12	16.7	1.0	33N
31N	29	17.5	1.3	8	17.7	1.7	13	17.6	1.0	83	19.2	1.0	31N
29N	25	18.2	2.0	15	19.2	1.3	26	20.1	1.3	1249	18.9	1.4	29N
27N	32	20.1	2.3	21	20.3	1.8	63	21.2	1.1	56	20.5	1.1	27N
25N	19	22.0	2.1	21	21.4	1.9	63	21.9	.9	64	21.5	.9	25N



MONTH JAN DEPTH 120 METERS NUMBER OF OBSERVATIONS 4294 TABLE 5 1  
175W 165W 155W 145W

53N	0	0	0	5	4.4	.4	17	4.0	.4	15	4.9	.7	53N
51N	3	4.2	.4	5	4.4	.4	14	4.1	.2	4	5.3	.5	51N
49N	5	4.1	.2	14	3.9	.1	14	4.3	.2	1526	4.9	.7	49N
47N	122	4.9	.5	4	5.1	.4	14	5.4	.6	1	6.7	0	47N
45N	23	5.2	.8	4	6.3	.6	13	6.5	.3	13	7.4	.6	45N
43N	8	8.0	.9	3	8.7	.5	20	8.1	.7	5	8.0	.4	43N
41N	14	9.0	.8	9	9.5	.7	17	9.7	.9	5	9.4	.3	41N
39N	153	11.2	1.0	7	11.2	.5	13	11.1	.4	2	11.6	.4	39N
37N	14	13.4	.6	11	12.0	.6	12	11.9	.6	9	11.3	1.0	37N
35N	7	13.9	.5	10	12.8	.9	93	12.6	.5	12	13.6	2.2	35N
33N	11	14.7	.8	15	14.2	.6	50	13.7	1.0	16	14.6	1.6	33N
31N	33	16.6	1.1	13	15.4	.8	25	16.0	1.1	186	18.3	.9	31N
29N	16	16.5	1.0	12	17.0	1.3	27	17.6	1.1	1064	18.1	1.1	29N
27N	41	18.4	1.5	37	19.1	1.5	111	19.7	1.7	100	19.0	1.0	27N
25N	41	20.7	1.7	37	20.2	1.3	111	20.5	1.2	91	19.9	1.0	25N

MONTH FEB DEPTH 120 METERS NUMBER OF OBSERVATIONS 4671 TABLE 5 2  
175W 165W 155W 145W

53N	11	3.0	.4	23	4.2	.4	19	3.9	.5	24	4.2	.5	53N
51N	45	3.6	.3	55	4.0	.3	11	3.9	.3	15	4.6	.5	51N
49N	24	3.6	.5	76	4.0	.4	10	4.0	.2	1340	4.8	.5	49N
47N	33	4.2	.6	35	5.0	.4	4	5.2	.7	16	6.2	.5	47N
45N	45	4.7	.5	21	6.7	.6	8	7.0	.5	3	7.5	.8	45N
43N	10	8.0	1.4	9	8.5	.5	12	8.5	.6	10	8.6	.6	43N
41N	27	9.0	1.1	12	9.9	.7	4	9.5	1.0	32	10.4	.5	41N
39N	29	10.9	.8	14	10.9	.6	6	10.3	.4	20	11.2	1.0	39N
37N	33	12.7	.8	14	12.0	1.1	25	12.0	.6	20	12.5	1.1	37N
35N	6	13.5	1.2	5	12.4	.7	176	13.0	.6	25	13.6	1.3	35N
33N	16	14.9	1.3	12	14.5	1.0	98	13.6	1.0	32	15.6	1.3	33N
31N	14	16.2	.9	9	15.8	1.3	48	16.1	1.5	119	18.2	.9	31N
29N	16	17.1	1.2	15	17.8	1.3	45	17.6	1.3	1214	18.2	.7	29N
27N	33	17.8	1.2	17	18.4	1.6	100	18.9	1.1	172	19.1	.7	27N
25N	39	20.4	1.2	28	20.0	1.2	125	20.5	1.0	187	19.9	.9	25N

MONTH APR DEPTH 120 METERS NUMBER OF OBSERVATIONS 4993 TABLE 5 3  
175W 165W 195W 145W

93N	10	2.8 .3	5	3.0 .4	27	3.0 .7	15	4.0 .5	93N
91N	37	3.6 .4	5	3.7 .4	26	3.8 .4	4	4.2 .5	91N
89N	24	3.6 .3	4	3.8 .1	26	3.9 .6	1497	4.8 .5	89N
87N	62	3.9 .4	7	4.0 .6	18	4.2 .6	5	5.4 .3	87N
85N	24	4.2 .6	7	6.5 .7	6	6.1 .7	3	7.4 .3	85N
83N	64	7.1 .8	8	8.2 .8	16	8.0 .8	5	8.2 .3	83N
81N	29	9.6 .8	1	9.2 .0	48	9.5 1.2	8	9.4 .4	81N
39N	63	11.1 1.3	4	10.6 1.2	54	11.0 .0	8	10.5 .4	39N
37N	28	13.0 .8	7	12.2 .4	53	11.7 .5	13	12.4 1.2	37N
35N	55	13.8 .5	13	12.9 .7	56	12.5 .7	51	13.9 1.2	35N
33N	82	14.5 .7	28	14.1 1.0	45	14.0 .4	46	14.8 1.3	33N
31N	70	15.6 .9	49	15.8 1.1	58	15.1 1.3	56	16.9 1.4	31N
29N	60	16.9 .9	55	17.0 1.4	92	17.2 1.2	1178	18.0 .7	29N
27N	67	18.1 1.2	63	19.2 1.3	130	17.7 1.2	124	18.9 .8	27N
25N	68	19.6 1.3	143	20.4 1.2	145	19.6 1.2	82	19.9 .0	25N

MONTH APR DEPTH 120 METERS NUMBER OF OBSERVATIONS 5735 TABLE 5 4  
175W 165W 195W 145W

93N	14	2.7 .3	24	3.8 .6	46	4.2 .6	36	4.2 .5	93N
91N	11	3.9 .5	24	3.9 .4	52	3.9 .4	20	4.3 .3	91N
89N	19	3.9 .3	35	4.1 .2	34	4.3 .7	1771	4.9 .5	89N
87N	111	4.5 .5	8	4.9 .5	24	5.5 .6	17	5.7 .7	87N
85N	10	5.0 1.2	17	6.4 1.0	29	6.2 .9	31	6.6 1.0	85N
83N	21	7.5 .5	29	7.8 .8	53	7.9 .8	41	8.6 .8	83N
81N	21	9.0 .7	45	9.1 .9	42	8.8 .9	31	9.5 .5	81N
39N	45	11.3 .9	53	11.0 .8	12	10.6 .8	22	10.4 .6	39N
37N	39	13.2 1.1	41	12.0 .6	17	11.4 .8	17	12.1 1.2	37N
35N	36	14.3 1.0	21	12.9 .7	17	13.4 1.5	41	14.0 .7	35N
33N	37	14.5 1.2	20	13.9 1.0	19	13.9 1.1	42	14.9 1.4	33N
31N	43	15.9 .8	32	15.7 .9	19	16.0 1.5	58	16.9 .9	31N
29N	76	16.7 .7	42	17.1 1.0	66	17.2 1.2	1462	17.8 1.0	29N
27N	101	17.9 1.3	48	18.7 1.4	84	18.2 1.3	131	18.6 .8	27N
25N	96	19.7 1.5	156	19.1 1.2	169	19.7 1.1	84	19.7 1.0	25N



MONTH MAY DEPTH 120 METERS NUMBER OF OBSERVATIONS 6026 TABLE 5 5  
175M 165M 155M 145M

53N	91	2.8	.5	41	4.1	.7	50	4.3	.5	40	4.4	.7	53N
51N	79	3.8	.4	103	4.1	.5	57	4.3	.5	50	4.5	.4	51N
49N	82	3.7	.4	69	3.9	.3	69	4.1	.5	2023	4.9	.5	49N
47N	127	4.4	.5	11	4.5	.6	55	5.1	.4	114	5.6	.7	47N
45N	22	5.2	1.0	24	6.4	.8	40	5.9	.7	33	6.9	.7	45N
43N	14	7.2	.4	6	8.3	1.4	21	7.4	.7	2	7.5	.4	43N
41N	5	9.3	.4	13	9.5	.9	14	8.7	.4	3	9.1	.7	41N
39N	47	10.8	.7	17	10.9	.7	15	10.9	.4	9	11.4	1.3	39N
37N	15	12.4	1.3	14	11.0	.7	17	11.8	.5	24	12.5	1.1	37N
35N	22	13.4	.8	14	13.0	.9	31	12.7	.9	53	13.6	1.0	35N
33N	34	14.8	1.4	16	13.9	.7	9	14.1	.9	65	14.7	1.2	33N
31N	14	15.4	1.0	21	15.0	.9	15	15.5	1.3	55	16.5	1.4	31N
29N	90	16.2	.6	11	16.0	1.3	25	17.2	.4	1301	17.6	1.1	29N
27N	223	17.3	.8	22	18.1	1.6	33	18.4	1.0	134	18.8	.8	27N
25N	74	18.5	1.4	43	18.7	1.4	122	20.0	1.0	127	20.0	.7	25N

MONTH JUN DEPTH 120 METERS NUMBER OF OBSERVATIONS 6052 TABLE 5 6  
175M 165M 155M 145M

53N	153	3.2	.5	155	3.8	.7	154	4.4	.7	57	4.8	.9	53N
51N	354	4.0	.5	61	4.3	.4	43	4.0	.5	61	4.7	.6	51N
49N	141	3.5	.4	24	4.0	.4	60	3.7	.3	1779	5.0	.5	49N
47N	104	3.9	.4	15	5.0	.9	44	4.9	.4	37	5.5	.7	47N
45N	36	5.2	.9	24	4.1	.8	44	6.1	.7	64	6.7	.8	45N
43N	43	7.1	.9	25	8.3	.4	54	7.5	.9	50	8.1	.5	43N
41N	28	9.4	.9	43	9.2	1.2	47	8.9	1.0	69	9.4	.8	41N
39N	30	10.7	.9	26	11.3	.6	42	10.7	1.2	64	10.8	.8	39N
37N	17	13.4	1.4	26	12.4	.8	8	12.1	.5	33	11.5	.9	37N
35N	5	13.2	1.1	23	13.4	.5	15	12.9	1.3	24	13.0	1.3	35N
33N	13	14.5	1.3	38	13.9	.4	16	13.8	.5	50	15.4	1.0	33N
31N	25	15.3	1.1	38	14.3	1.2	14	16.9	1.0	36	17.1	1.0	31N
29N	75	16.2	.7	45	17.5	1.6	32	17.2	.4	1464	17.7	.9	29N
27N	147	17.3	1.0	33	18.5	1.2	20	18.7	.9	144	18.6	.8	27N
25N	74	19.5	1.4	76	19.3	1.6	100	19.9	1.1	142	19.4	.8	25N

MONTH JUL DEPTH 120 METERS NUMBER OF OBSERVATIONS 7326 TABLE 5 7  
1954 1954 1954 1954

53N	140	3.5	.5	166	4.2	.6	221	4.2	.5	67	4.3	.6	53N
51N	300	4.2	.6	164	4.0	.4	120	4.2	.5	69	4.2	.6	51N
49N	235	3.8	.5	110	3.9	.5	79	4.2	.5	1916	4.8	.5	49N
47N	57	4.0	.7	39	4.8	.8	36	5.5	.6	39	5.0	.5	47N
45N	7	5.0	.9	19	5.5	.6	36	6.4	.4	57	7.3	.7	45N
43N	5	5.5	.4	12	8.3	1.6	82	7.7	.7	51	8.0	.8	43N
41N	129	8.4	1.0	15	8.5	.8	112	9.2	1.1	62	9.3	.9	41N
39N	92	13.3	1.4	106	11.4	.9	90	11.3	.7	80	10.7	1.0	39N
37N	15	12.7	1.0	29	11.5	1.0	33	11.5	.6	80	11.6	1.1	37N
35N	5	13.6	1.3	18	13.1	1.0	35	12.3	.5	37	13.3	1.2	35N
33N	6	14.7	1.3	26	13.9	1.1	33	13.8	1.0	37	15.0	1.4	33N
31N	19	15.9	.7	12	14.4	1.0	35	15.5	1.1	56	16.7	1.0	31N
29N	39	16.9	1.1	4	16.3	.9	48	17.2	1.3	1253	17.8	1.3	29N
27N	81	18.1	1.0	7	18.6	1.8	104	18.5	.9	131	18.9	.8	27N
25N	43	19.0	1.3	28	19.8	1.6	166	19.8	.9	139	19.7	.7	25N

MONTH AUG DEPTH 120 METERS NUMBER OF OBSERVATIONS 8117 TABLE 5 8  
1954 1954 1954 1954

53N	120	3.4	.6	192	4.3	.6	138	4.2	.6	45	4.2	.7	53N
51N	538	4.3	.7	274	4.0	.5	156	3.9	.5	86	4.5	.8	51N
49N	346	3.6	.6	193	3.8	.6	109	3.9	.5	1707	4.9	.5	49N
47N	221	4.7	.7	47	4.9	.8	101	5.0	.8	29	6.0	.8	47N
45N	81	5.9	1.5	71	6.3	.8	73	6.3	.8	66	6.8	.6	45N
43N	47	8.2	1.2	26	7.8	1.5	85	7.9	.9	53	7.9	.6	43N
41N	80	10.0	.9	24	10.1	1.1	67	9.4	.9	65	9.1	.7	41N
39N	109	11.9	1.2	64	11.3	1.0	81	10.5	1.0	66	10.0	1.1	39N
37N	47	13.3	1.5	14	11.5	1.0	42	11.7	.7	49	11.5	1.1	37N
35N	12	14.2	1.5	9	13.0	.6	64	12.6	.7	50	13.4	1.3	35N
33N	17	14.6	1.6	21	14.3	1.0	49	14.4	1.4	16	14.3	.5	33N
31N	13	15.9	.8	16	14.9	1.0	52	16.3	.9	48	17.0	.6	31N
29N	20	16.6	1.5	3	16.5	.6	69	16.4	.9	1407	17.7	.8	29N
27N	66	18.0	1.2	8	17.6	2.8	111	18.9	1.4	192	18.5	.6	27N
25N	49	19.7	1.5	24	20.0	1.6	139	19.9	1.0	108	19.6	.8	25N



MONTH SEP DEPTH 120 METERS NUMBER OF OBSERVATIONS 6803 TABLE 5 9  
175W 165W 155W 145W

53N	40	3.9	.9	108	4.6	.7	61	4.3	.7	25	4.3	.7	53N
51N	106	4.4	.8	88	4.0	.5	81	4.1	.4	55	4.5	.4	51N
49N	67	4.1	.7	56	3.9	.5	43	4.3	.5	2137	4.7	.5	49N
47N	69	4.6	.8	36	5.0	.4	41	5.4	.7	27	4.2	.6	47N
45N	50	6.1	1.3	49	6.0	.7	57	4.8	.7	16	6.5	.9	45N
43N	27	8.6	1.2	26	8.4	.8	61	4.3	.4	1	7.8	0	43N
41N	49	10.3	1.0	39	9.8	.6	70	9.8	1.0	5	10.2	.8	41N
39N	52	11.6	.9	107	11.4	.9	73	11.2	.7	34	11.2	.7	39N
37N	29	13.2	.8	62	12.3	.7	39	11.9	.4	35	12.3	1.0	37N
35N	32	13.4	.9	21	13.1	.6	47	12.7	.7	33	13.1	1.3	35N
33N	44	14.9	1.1	30	13.7	.9	72	14.0	.9	13	14.6	1.4	33N
31N	45	15.6	.6	34	15.3	1.0	47	15.4	1.0	46	16.9	.8	31N
29N	48	16.8	1.1	30	16.5	.9	46	16.8	1.0	1368	17.5	.4	29N
27N	103	17.7	1.2	35	19.0	1.3	130	18.5	1.4	120	18.6	.8	27N
25N	67	19.4	1.4	77	19.9	1.3	181	19.8	1.2	103	19.5	.8	25N

MONTH OCT DEPTH 120 METERS NUMBER OF OBSERVATIONS 6501 TABLE 5 10  
175W 165W 155W 145W

53N	5	3.9	.6	18	4.5	.4	28	4.1	.4	7	4.4	.4	53N
51N	37	4.6	.7	13	4.1	.4	21	4.1	.5	7	4.1	.6	51N
49N	43	4.1	.8	41	4.6	.8	18	4.3	.7	1493	4.6	.5	49N
47N	123	4.5	.4	9	4.5	.8	20	5.7	.7	5	5.5	.4	47N
45N	59	5.6	1.0	11	5.7	.8	29	6.5	.9	11	7.0	.5	45N
43N	81	7.9	.9	41	8.5	.9	70	8.9	1.1	14	7.9	.9	43N
41N	42	9.7	.9	49	9.4	1.2	40	9.4	.9	48	10.5	.5	41N
39N	113	12.2	.8	14	11.0	.6	25	11.2	.7	59	11.4	.6	39N
37N	51	12.5	1.1	18	12.0	.6	15	12.5	.6	46	12.0	.9	37N
35N	65	13.6	1.2	15	13.1	.7	14	12.7	.6	74	13.3	1.1	35N
33N	67	14.4	.8	22	13.6	1.3	23	14.4	1.1	94	15.2	1.1	33N
31N	52	15.8	.7	17	15.2	.8	41	16.0	1.1	89	16.7	1.0	31N
29N	61	16.5	1.0	47	16.0	1.1	44	17.6	1.0	2205	17.5	.7	29N
27N	230	18.2	1.9	12	18.7	.8	70	19.2	.7	159	18.5	.8	27N
25N	64	20.0	1.4	44	19.7	1.6	117	19.9	1.0	127	19.6	.8	25N

MONTH NOV DEPTH 120 METERS NUMBER OF OBSERVATIONS 4503 TABLE 5 11  
175M 165M 155M 145M

53N	2	3.1	.3	2	5.4	.4	12	4.6	.6	4	5.0	.5	53N
51N	3	5.3	.0	0	0	0	10	4.3	.6	0	0	0	51N
49N	23	4.5	.8	8	3.8	.5	11	4.2	.4	1331	4.5	.6	49N
47N	98	4.7	.4	10	4.8	.7	12	5.4	1.0	9	5.4	.6	47N
45N	17	4.4	.3	13	6.3	.9	16	6.6	.4	10	7.0	.4	45N
43N	27	9.7	.5	6	8.2	.9	81	7.7	.5	9	8.6	.7	43N
41N	34	9.4	.9	7	9.9	.4	58	8.7	1.0	5	9.5	.8	41N
39N	178	12.4	1.0	15	10.6	.7	12	10.8	.5	19	10.2	.5	39N
37N	30	13.3	.6	3	12.5	1.6	14	11.8	.6	12	11.3	1.0	37N
35N	4	14.7	1.2	5	12.8	.5	24	12.4	.5	28	13.2	.9	35N
33N	18	16.2	.9	9	14.3	.5	20	13.6	.6	18	15.0	1.3	33N
31N	35	15.7	1.0	25	15.2	.8	28	16.1	1.0	44	16.8	1.0	31N
29N	45	16.7	1.2	21	16.5	1.3	64	17.1	1.1	1354	17.5	1.0	29N
27N	102	17.8	1.2	26	18.5	1.0	109	18.8	1.2	106	18.5	.9	27N
25N	75	19.4	1.5	131	19.8	1.6	105	19.8	.9	86	19.4	.9	25N

MONTH DEC DEPTH 120 METERS NUMBER OF OBSERVATIONS 3427 TABLE 5 12  
175M 165M 155M 145M

53N	0	0	0	0	0	0	4	4.1	.3	0	0	0	53N
51N	1	4.7	0	5	4.5	.3	4	3.7	.4	0	0	0	51N
49N	2	4.8	.0	14	4.2	.3	9	4.1	.4	1431	4.7	.6	49N
47N	23	4.8	.6	3	5.0	.9	10	5.6	1.0	2	5.6	.2	47N
45N	9	5.4	1.1	4	6.8	.1	4	7.6	.4	2	7.5	.2	45N
43N	31	9.5	.5	4	8.9	.2	24	8.7	.3	1	7.7	0	43N
41N	10	9.7	.7	38	9.3	.7	32	9.4	.6	16	9.9	1.0	41N
39N	7	12.1	.6	3	11.5	.2	2	11.7	.1	8	11.1	1.0	39N
37N	10	11.8	.9	4	11.8	.9	3	12.1	.2	11	12.6	1.2	37N
35N	8	13.5	.9	4	12.9	.6	4	13.5	.9	11	14.0	1.1	35N
33N	5	14.7	1.8	7	13.7	.5	10	14.4	.8	12	15.0	1.3	33N
31N	22	15.9	1.0	7	15.2	.9	12	15.7	1.0	71	18.3	1.2	31N
29N	22	16.7	1.4	13	17.3	1.4	23	18.0	1.3	1159	17.5	1.2	29N
27N	27	17.0	1.6	18	18.3	1.8	63	19.3	1.0	50	18.8	.9	27N
25N	16	19.8	2.3	20	19.1	2.3	62	20.2	.8	50	19.8	.9	25N



MONTH JAN DEPTH 150 METERS NUMBER OF OBSERVATIONS 2946 TABLE 6 1  
175W 165W 155W 145W

53N	0	0	4	0.3	.2	17	0.1	.2	15	0.8	.8	53W
51N	3	4.2	9	0.5	.5	14	0.0	.3	6	5.1	.4	51W
49N	3	4.2	11	3.0	.3	14	0.1	.1	107A	0.0	.5	49W
47N	117	3.0	4	0.9	.0	14	5.1	.7	0	0	0	47W
45N	20	0.9	4	0.2	.7	13	0.6	.1	13	7.1	.5	45W
43N	4	7.8	3	0.1	.5	20	7.0	.5	6	7.8	.7	43W
41N	15	8.8	7	0.2	.8	16	0.5	.8	3	0.1	.1	41W
39N	104	10.6	3	10.9	.3	13	10.6	.6	1	10.1	0	39W
37N	3	12.5	10	11.7	.6	12	11.5	.5	7	11.1	.6	37W
35N	3	13.2	10	12.2	.8	93	12.1	.4	11	12.3	1.1	35W
33N	8	14.1	15	13.3	.6	50	12.8	.6	14	13.1	1.1	33W
31N	10	15.0	12	14.3	.8	25	14.4	.7	23	15.4	1.3	31W
29N	14	15.5	11	15.7	1.1	27	16.2	1.3	51A	16.3	1.2	29W
27N	40	16.0	36	17.4	1.3	111	18.3	1.8	87	17.6	.9	27W
25N	31	18.7	32	18.9	1.2	110	18.9	1.2	73	18.6	.9	25W

MONTH FEB DEPTH 150 METERS NUMBER OF OBSERVATIONS 3372 TABLE 6 2  
175W 165W 155W 145W

53N	10	3.2	23	4.4	.4	19	4.0	.4	24	4.4	.7	53W
51N	45	3.7	53	4.1	.3	11	3.9	.2	15	4.2	.3	51W
49N	24	3.7	64	4.0	.4	10	3.0	.2	102A	4.4	.5	49W
47N	19	3.8	35	4.9	.5	8	0.9	.4	16	5.8	.4	47W
45N	27	4.2	20	6.7	.5	8	6.7	.4	2	7.0	.4	45W
43N	8	6.6	9	6.2	.5	11	8.3	.4	8	6.6	.5	43W
41N	16	9.5	12	9.7	.6	8	9.1	1.1	32	10.0	.5	41W
39N	18	10.9	12	10.7	.7	6	10.2	.2	17	10.5	.5	39W
37N	18	12.5	15	11.8	1.2	23	11.4	.5	28	11.3	.9	37W
35N	3	12.9	5	12.0	.9	172	12.3	.4	23	12.5	1.3	35W
33N	8	14.3	8	13.6	.7	93	12.8	.7	32	13.9	1.4	33W
31N	6	16.1	9	14.4	.7	41	14.7	1.4	39	15.5	1.4	31W
29N	9	16.4	13	17.1	1.3	41	16.0	1.5	611	16.8	1.2	29W
27N	16	17.1	17	17.3	1.7	95	17.5	1.3	134	17.9	1.0	27W
25N	24	19.5	19	19.1	1.4	107	19.3	1.3	143	18.7	1.2	25W

MONTH MAR DEPTH 150 METERS NUMBER OF OBSERVATIONS 3736 TABLE 6 3  
175W 165W 155W 145W

53N	10	3.0 .5	4	3.5 .5	24	4.3 .5	11	4.1 .4	53N
51N	36	3.6 .3	4	3.8 .1	26	3.9 .5	4	4.1 .3	51N
49N	24	3.9 .3	3	4.4 .4	26	3.9 .6	1183	4.5 .5	49N
47N	43	3.7 .5	4	5.0 .5	18	4.7 .8	5	5.2 .3	47N
45N	22	5.2 .9	7	6.7 .9	4	6.1 .8	3	7.4 .2	45N
43N	33	7.5 .7	8	8.7 .6	9	8.0 .6	5	7.8 .2	43N
41N	25	9.7 .7	1	9.1 0	28	9.4 1.1	7	9.1 .6	41N
39N	20	10.4 .7	4	9.8 .5	40	10.6 .9	8	10.0 .4	39N
37N	18	12.6 1.1	7	11.8 .5	45	11.3 .6	13	11.3 .7	37N
35N	53	13.5 .6	13	12.7 .6	45	11.9 .6	49	12.2 1.1	35N
33N	81	14.2 .7	22	13.7 .8	37	13.0 .7	45	13.3 1.1	33N
31N	66	15.3 .9	48	14.6 .9	43	13.9 1.2	30	14.9 1.4	31N
29N	59	16.0 .9	41	16.1 1.4	41	16.0 1.2	544	16.7 1.4	29N
27N	54	17.4 1.1	57	18.2 1.3	117	16.7 1.1	108	17.9 .9	27N
25N	58	18.8 1.4	133	19.2 1.2	134	18.4 1.4	67	18.6 1.3	25N

MONTH APR DEPTH 150 METERS NUMBER OF OBSERVATIONS 3902 TABLE 6 4  
175W 165W 155W 145W

53N	13	2.8 .3	16	4.1 .4	24	4.4 .5	17	4.3 .6	53N
51N	11	3.9 .5	21	4.1 .2	31	3.9 .3	13	4.3 .5	51N
49N	18	4.0 .2	23	4.1 .2	22	4.1 .3	1237	4.6 .5	49N
47N	92	4.6 .6	6	4.7 .3	13	5.3 .7	9	5.5 .4	47N
45N	15	5.1 1.4	11	6.6 .8	21	6.4 .8	16	6.4 .7	45N
43N	20	7.5 .3	19	7.5 .8	46	8.2 .4	25	8.1 .5	43N
41N	8	9.1 .6	40	8.9 .9	36	8.9 .7	29	9.5 .7	41N
39N	39	11.1 .9	47	10.9 .7	9	10.6 .6	20	10.2 .5	39N
37N	31	12.9 .9	38	11.7 .5	12	11.3 .8	15	11.0 .8	37N
35N	28	14.3 .8	17	12.5 .7	15	12.5 1.4	40	12.9 1.0	35N
33N	21	15.2 .4	16	13.5 1.0	19	12.9 .6	42	13.4 1.4	33N
31N	50	15.5 .7	29	15.1 .9	18	14.2 .8	49	15.3 1.1	31N
29N	72	16.3 .7	42	16.2 1.2	65	16.2 1.4	597	16.3 1.3	29N
27N	77	17.1 1.0	48	17.8 1.7	79	17.2 1.3	112	17.7 .9	27N
25N	36	18.7 1.1	145	18.2 1.2	158	18.7 1.1	64	18.8 1.2	25N



MONTH MAY DEPTH 150 METERS NUMBER OF OBSERVATIONS 4354 TABLE 6 5  
175M 165M 155M 145M

53N	50	2.9	.5	77	4.3	.7	26	4.2	.4	35	4.3	.8	53N
51N	76	3.8	.5	99	4.3	.6	32	4.0	.5	18	4.1	.3	51N
49N	77	3.8	.3	64	3.7	.5	40	4.0	.3	1516	4.6	.5	49N
47N	95	3.7	.6	11	4.3	.8	32	4.9	.9	57	5.8	.6	47N
45N	20	5.6	1.0	23	6.1	.8	18	6.3	1.2	30	6.8	.5	45N
43N	13	7.1	.6	5	7.7	.6	16	7.7	.5	2	8.1	.9	43N
41N	5	9.0	.3	12	9.2	.9	14	8.5	.6	3	9.1	.3	41N
39N	28	10.5	.7	15	10.6	.8	15	10.4	.5	7	10.4	.7	39N
37N	12	11.5	.0	15	11.6	.7	17	11.4	.4	24	11.6	1.1	37N
35N	11	12.9	1.0	12	12.6	.9	29	12.1	.6	50	12.6	1.1	35N
33N	26	14.9	1.1	13	13.3	.5	8	13.2	.8	62	13.6	1.4	33N
31N	15	15.1	.8	18	14.3	.9	15	14.5	1.1	51	15.3	1.5	31N
29N	86	15.7	.7	10	15.3	1.4	24	15.7	.9	672	16.5	1.1	29N
27N	183	16.7	.7	17	17.2	1.6	30	17.4	1.0	136	17.9	1.7	27N
25N	45	18.0	1.2	24	18.2	1.3	112	19.0	1.1	112	19.1	.8	25N

MONTH JUN DEPTH 150 METERS NUMBER OF OBSERVATIONS 4474 TABLE 6 6  
175M 165M 155M 145M

53N	146	3.2	.5	138	3.8	.7	62	4.5	.6	35	4.8	.9	53N
51N	327	3.9	.5	96	4.3	.5	44	4.0	.6	34	4.5	.7	51N
49N	136	3.6	.5	9	4.4	1.0	24	3.8	.4	1157	4.8	.6	49N
47N	45	3.7	.7	11	4.6	.7	28	5.0	.8	21	5.7	.8	47N
45N	18	5.4	.7	16	6.2	.8	22	6.6	.6	25	6.5	.6	45N
43N	73	7.1	.8	19	8.3	.9	40	7.6	.8	28	8.0	.4	43N
41N	20	9.8	.3	32	8.9	1.1	37	8.7	.8	41	9.1	.6	41N
39N	21	10.7	.7	25	11.0	.6	22	10.7	.8	40	10.0	.4	39N
37N	4	11.6	.3	22	12.1	.8	5	11.5	.5	27	10.6	.9	37N
35N	5	12.8	.9	21	13.1	.4	8	12.7	1.2	27	11.7	.9	35N
33N	6	14.8	.9	33	13.4	.7	13	12.8	.4	48	14.2	1.1	33N
31N	14	15.1	1.0	33	14.7	1.3	17	16.0	.9	31	15.9	1.1	31N
29N	66	15.7	.7	44	16.7	1.6	29	16.1	.7	574	16.6	.9	29N
27N	123	16.5	.8	31	17.8	1.3	16	18.0	1.1	171	17.7	.9	27N
25N	63	18.6	1.3	68	18.3	1.6	96	18.8	1.2	127	18.7	.9	25N

MONTH JUL DEPTH 150 METERS NUMBER OF OBSERVATIONS 5374 TABLE 6 7  
175M 165M 155M 145M

53N	134	3.4 .5	141	4.2 .6	174	4.3 .5	45	4.2 .7	53N
51N	3A3	4.1 .5	148	4.1 .4	64	4.0 .4	39	4.3 .5	51N
49N	21A	3.4 .5	89	3.8 .4	54	3.9 .3	1135	4.8 .6	49N
47N	22	4.1 1.1	22	4.3 .6	27	5.2 1.0	36	5.6 .4	47N
45N	4	5.8 .3	3	6.4 .4	25	6.5 .5	42	7.2 .5	45N
43N	1	6.4 0	7	7.4 1.4	68	7.9 .6	36	8.1 .7	43N
41N	126	7.9 .9	11	9.4 .6	95	9.1 .9	49	9.1 .7	41N
39N	80	13.3 1.0	81	11.4 .7	89	11.0 .7	77	10.1 .7	39N
37N	14	12.0 .7	26	11.1 1.0	33	11.2 .6	72	10.6 .8	37N
35N	5	13.1 1.2	18	12.6 1.0	33	11.9 .4	33	11.9 .9	35N
33N	6	14.3 1.3	23	13.3 .7	30	13.1 1.0	24	13.5 1.1	33N
31N	14	15.3 .8	10	13.7 .9	35	14.5 1.0	52	15.4 1.4	31N
29N	36	16.3 1.0	2	15.9 1.0	48	14.1 1.3	680	16.5 1.1	29N
27N	74	17.2 .9	6	17.0 1.5	103	17.4 .9	119	18.0 .9	27N
25N	34	17.8 1.2	24	18.7 1.9	165	18.7 1.1	124	18.8 .7	25N

MONTH AUG DEPTH 150 METERS NUMBER OF OBSERVATIONS 5704 TABLE 6 8  
175M 165M 155M 145M

53N	107	3.3 .6	165	4.2 .5	112	4.2 .6	68	4.4 .8	53N
51N	510	4.2 .6	240	4.0 .5	121	4.0 .4	65	4.4 .6	51N
49N	323	3.5 .6	144	3.7 .6	98	3.8 .4	1138	4.7 .5	49N
47N	170	4.5 .7	32	4.6 .7	87	4.0 .7	25	5.0 .7	47N
45N	67	5.7 1.6	25	6.3 .8	55	6.4 .6	48	6.9 .5	45N
43N	41	8.3 1.0	18	7.9 1.2	76	8.0 .8	37	7.9 .6	43N
41N	61	9.6 .7	9	9.7 1.0	59	9.3 .6	50	9.0 .6	41N
39N	80	11.7 1.2	32	11.6 .6	64	10.6 .7	36	10.2 .7	39N
37N	35	12.4 1.1	13	11.0 1.0	32	11.5 .5	30	10.7 .9	37N
35N	9	12.7 .9	9	12.6 .6	53	12.1 .5	28	11.8 1.7	35N
33N	14	13.9 1.5	19	13.8 1.0	44	13.8 1.2	16	12.8 .5	33N
31N	5	14.9 .7	15	14.1 .9	47	15.4 .9	38	15.9 1.1	31N
29N	16	15.9 1.5	3	15.2 .7	43	15.5 .7	580	16.9 .9	29N
27N	43	16.7 .9	5	17.4 2.1	103	17.8 1.3	161	17.6 .7	27N
25N	39	18.6 1.4	10	17.7 1.2	119	18.6 1.0	86	18.6 .8	25N



MONTH SEP DEPTH 150 METERS NUMBER OF OBSERVATIONS 4610 TABLE 6  
175W 165W 155W 145W

53N	37	3.3 .9	93	4.5 .6	48	4.3 .5	25	4.3 .6	53N
51N	99	4.5 .7	73	3.9 .5	70	4.2 .4	51	4.5 .7	51N
49N	54	3.9 .4	41	3.7 .6	36	4.3 .5	1292	4.4 .5	49N
47N	53	4.5 .8	32	4.6 .5	30	5.6 .8	21	4.2 .5	47N
45N	35	4.1 1.2	38	4.3 .7	34	4.8 .7	14	4.7 .8	45N
43N	22	4.9 .9	24	4.4 .7	58	4.4 .6	1	4.2 .0	43N
41N	38	9.9 1.0	33	9.4 .7	42	9.6 .8	4	10.1 .4	41N
39N	28	11.5 .8	30	11.0 .6	65	10.9 .7	33	10.6 .5	39N
37N	15	13.0 .9	36	11.7 .8	33	11.5 .5	30	11.4 .7	37N
35N	25	13.1 1.0	18	12.6 .5	78	12.2 .6	30	12.1 .7	35N
33N	37	14.3 1.1	27	13.1 .8	54	13.3 .8	12	13.1 .9	33N
31N	34	15.0 .6	26	14.5 .8	77	14.5 .9	40	15.5 1.1	31N
29N	38	16.0 .9	27	15.4 .8	85	15.7 1.0	658	16.7 .8	29N
27N	51	16.8 .9	31	17.8 1.2	122	17.4 1.4	104	17.6 .9	27N
25N	51	18.2 1.3	50	18.8 1.3	169	18.5 1.1	86	18.5 .8	25N

MONTH OCT DEPTH 150 METERS NUMBER OF OBSERVATIONS 4739 TABLE 6 10  
175W 165W 155W 145W

53N	5	3.7 .5	12	4.5 .5	24	4.3 .4	5	4.4 .4	53N
51N	36	4.4 .7	9	4.1 .3	21	4.2 .3	5	4.1 .2	51N
49N	21	4.1 .4	4	4.4 .3	17	4.2 .4	1018	4.5 .4	49N
47N	121	4.4 .4	7	4.9 .8	20	5.4 .7	4	5.4 .2	47N
45N	29	5.5 1.2	10	6.1 .4	29	6.4 .8	11	7.0 .4	45N
43N	59	7.7 .8	41	8.3 .8	70	8.8 1.0	9	7.8 .6	43N
41N	18	9.2 1.1	49	9.2 1.1	38	9.2 .8	46	10.0 .4	41N
39N	36	11.5 1.1	15	10.6 .7	22	10.7 .5	50	10.6 .6	39N
37N	33	12.3 1.0	13	11.3 .5	13	11.7 .4	66	10.9 .7	37N
35N	57	13.1 .8	10	12.6 .7	15	12.1 .5	72	11.9 .9	35N
33N	63	13.8 .7	17	12.9 1.1	23	13.4 .6	92	13.4 1.0	33N
31N	35	14.9 .9	16	14.4 .7	39	14.8 .9	87	15.3 1.3	31N
29N	54	15.8 .5	37	14.9 .9	44	16.4 1.1	1363	16.8 .9	29N
27N	214	15.2 1.7	10	17.4 .9	65	18.0 .9	135	17.4 .8	27N
25N	56	18.5 1.3	31	18.3 1.6	110	18.6 1.1	98	18.6 .9	25N

MONTH NOV DEPTH 150 METERS NUMBER OF OBSERVATIONS 3154 TABLE 6 11  
175N 165W 155W 145W

53N	2	3.2	.1	2	4.9	.1	10	4.5	.5	4	4.6	.3	53N
51N	3	5.3	.2	0	0	0	10	4.3	.4	0	0	0	51N
49N	13	5.3	.2	4	4.0	.2	11	4.1	.4	1036	4.4	.5	49N
47N	11	4.1	.5	10	4.9	.7	12	5.3	.9	9	5.5	.5	47N
45N	10	3.7	.2	12	6.6	.7	15	6.6	.4	10	7.0	.4	45N
43N	26	9.5	.2	6	8.1	.6	79	7.9	.4	9	8.3	.6	43N
41N	24	9.0	.6	7	9.4	.3	53	8.5	.7	5	9.4	.4	41N
39N	97	12.2	1.1	15	10.2	.7	11	10.5	.6	19	9.9	.4	39N
37N	1	13.5	0	2	11.1	.1	14	11.4	.5	7	10.3	.8	37N
35N	1	14.0	0	5	12.2	.4	21	11.9	.4	24	12.2	.4	35N
33N	1	14.8	0	6	13.8	.5	19	12.8	.8	18	13.6	1.2	33N
31N	16	15.1	.4	20	14.4	.6	25	15.1	1.0	38	15.5	1.1	31N
29N	39	15.8	1.0	20	15.5	1.2	54	15.8	.9	583	16.6	1.0	29N
27N	83	16.8	1.0	22	17.1	.9	98	17.5	1.2	86	17.3	.9	27N
25N	58	18.1	1.4	116	18.4	1.5	101	18.5	.9	66	18.2	1.0	25N

MONTH DEC DEPTH 150 METERS NUMBER OF OBSERVATIONS 2141 TABLE 6 12  
175N 165W 155W 145W

53N	0	0	0	0	0	0	3	4.2	.3	0	0	0	53N
51N	0	0	0	0	0	0	4	4.0	.1	0	0	0	51N
49N	0	0	0	5	4.3	.0	9	4.0	.2	1016	4.4	.5	49N
47N	0	0	0	3	5.0	.8	9	5.4	.8	2	5.6	.1	47N
45N	2	6.8	1.0	4	6.7	.4	4	7.1	.3	2	6.8	.0	45N
43N	4	8.6	.7	4	8.6	.2	24	8.5	.3	1	7.9	0	43N
41N	6	9.5	.7	36	9.0	.5	32	9.1	.6	16	9.5	1.0	41N
39N	4	11.0	.1	3	11.0	.2	1	11.3	0	8	10.5	.7	39N
37N	6	11.0	.8	2	11.3	.1	2	11.6	.3	9	11.6	.8	37N
35N	4	12.6	.7	2	12.3	.4	3	12.6	.6	11	12.5	1.0	35N
33N	2	12.9	1.2	6	13.0	.4	8	13.2	.7	12	13.9	1.2	33N
31N	6	14.5	.8	6	14.3	.8	11	14.3	.9	13	15.8	1.0	31N
29N	17	15.9	.4	11	16.1	1.1	23	16.8	1.2	517	16.2	1.3	29N
27N	18	17.2	1.0	14	17.1	1.0	63	18.0	.9	44	17.5	.7	27N
25N	12	18.5	1.4	10	18.4	.9	60	18.9	.9	39	18.6	.9	25N



MONTH JAN DEPTH 200 METERS NUMBER OF OBSERVATIONS 2865 TABLE 7 1  
175N 165W 155W

53N	0	0	0	4	4.3	.2	17	4.0	.3	15	4.5	.7	53N
51N	3	4.6	.7	9	4.4	.4	14	3.9	.2	6	4.7	.4	51N
49N	3	4.3	.1	11	3.9	.3	14	3.8	.3	106R	4.0	.4	49N
47N	113	3.9	.6	4	4.7	.6	14	4.8	.6	0	0	0	47N
45N	15	4.5	.8	4	5.7	.7	13	6.3	.3	13	6.0	.4	45N
43N	1	7.2	0	3	8.5	.4	20	7.7	.3	6	7.4	.6	43N
41N	11	8.6	.6	7	8.6	.6	16	9.1	.7	3	8.5	.1	41N
39N	100	10.2	.5	3	10.2	.4	13	10.2	.5	1	10.2	0	39N
37N	3	11.4	1.2	10	10.9	.5	10	10.8	.4	7	10.3	.4	37N
35N	3	12.4	.4	10	11.4	.8	93	11.5	.4	11	10.8	.6	35N
33N	4	12.9	.5	15	12.4	.5	50	12.1	.4	14	11.5	.7	33N
31N	10	13.9	.7	12	13.2	.6	25	13.0	.5	23	12.9	.8	31N
29N	14	14.5	.7	11	14.1	.9	27	14.2	1.2	490	13.3	1.1	29N
27N	38	15.4	.8	36	15.4	1.0	110	16.1	1.6	84	15.2	1.0	27N
25N	29	16.8	1.1	29	16.4	.9	107	16.6	1.3	65	16.3	1.1	25N

MONTH FEB DEPTH 200 METERS NUMBER OF OBSERVATIONS 3217 TABLE 7 2  
175N 165W 155W

53N	10	3.7	.3	19	4.5	.5	18	3.9	.4	23	4.2	.6	53N
51N	44	3.7	.2	53	4.0	.2	11	3.9	.2	12	4.0	.4	51N
49N	24	3.7	.3	66	3.8	.3	10	3.8	.2	995	3.9	.5	49N
47N	18	3.8	.6	35	4.4	.5	8	4.8	.4	14	5.4	.4	47N
45N	24	4.3	.6	20	6.1	.6	7	6.3	.6	2	6.7	.4	45N
43N	8	8.5	.8	9	7.7	.4	11	7.9	.4	8	8.4	.5	43N
41N	16	9.1	.9	12	9.1	.5	8	8.5	.7	32	9.0	.4	41N
39N	18	10.2	.9	12	10.2	.8	6	9.7	.2	17	9.5	.5	39N
37N	18	11.8	1.3	15	11.2	.9	23	10.7	.4	26	10.2	.3	37N
35N	3	11.8	.8	5	11.2	.6	167	11.7	.4	21	11.1	.7	35N
33N	6	13.4	.8	8	12.9	.6	92	12.1	.4	31	11.8	.7	33N
31N	6	15.1	.5	9	13.2	.5	39	13.0	.7	37	12.9	.9	31N
29N	7	15.1	1.4	11	15.0	1.2	39	13.8	.9	471	13.6	1.1	29N
27N	13	15.6	1.3	17	15.2	1.2	92	15.0	1.2	118	15.1	1.1	27N
25N	21	17.2	1.3	17	16.6	1.5	104	16.8	1.2	129	16.2	1.3	25N

MONTH MAP DEPTH 200 METERS NUMBER OF OBSERVATIONS 3606 TABLE 7 3  
175° 165W 155W 145°

53N	10	3.6	.3	4	3.5	.4	24	4.1	.4	11	4.1	.5	53N
51N	30	3.7	.3	4	3.7	.0	26	3.8	.4	3	3.8	.1	51N
49N	24	3.9	.2	3	4.1	.3	26	3.8	.5	1174	4.0	.5	49N
47N	30	3.7	.5	4	4.7	.4	18	4.5	.6	4	4.8	.3	47N
45N	22	4.9	.8	7	6.4	.8	4	5.7	.6	3	6.8	.2	45N
43N	32	7.2	.7	8	8.1	.8	9	7.5	.7	5	7.8	.2	43N
41N	25	8.9	.9	1	8.9	0	24	8.7	.9	7	8.8	.5	41N
39N	18	9.9	.7	4	9.2	.3	33	10.0	.9	8	9.6	.2	39N
37N	18	12.0	1.3	7	11.1	.4	38	10.7	.6	13	10.3	.4	37N
35N	53	13.0	.6	13	12.1	.6	34	11.2	.5	39	10.8	.4	35N
33N	79	13.4	.8	22	12.8	.8	29	11.9	.7	44	11.4	.6	33N
31N	66	14.5	.9	48	13.4	.8	38	12.6	.8	39	12.5	.7	31N
29N	58	14.9	1.1	51	14.3	1.1	74	14.0	1.0	523	13.6	1.2	29N
27N	54	16.1	1.0	57	16.2	1.3	107	14.7	1.1	105	15.1	1.1	27N
25N	56	17.0	1.4	131	16.8	1.3	125	16.3	1.4	64	16.2	1.3	25N

MONTH	APR	DEPTH	200	METERS	NUMBER OF OBSERVATIONS	3694	TABLE	7
	175W		165W		155W		145W	

[illegible]



MONTH MAY DEPTH 200 METERS NUMBER OF OBSERVATIONS 4140 TABLE 7 5  
175W 165W 155W 145W

53N	50	3.3 .3	70	4.3 .7	23	4.0 .3	35	4.2 .6	53N
51N	71	3.9 .5	99	4.1 .6	32	4.4 .6	1A	4.1 .4	51N
49N	77	3.8 .3	67	3.7 .5	34	4.0 .3	1492	4.1 .6	49N
47N	87	3.2 .9	10	4.2 .8	21	4.4 1.0	50	5.5 .6	47N
45N	20	5.4 .9	23	5.7 1.0	16	5.9 1.3	24	6.5 .5	45N
43N	13	6.6 .8	5	7.4 .5	1A	7.4 .4	2	7.7 .6	43N
41N	5	8.4 .5	12	8.5 .9	14	8.3 .5	3	9.1 .6	41N
39N	28	10.1 .8	14	9.8 .7	15	9.9 .5	7	10.0 .7	39N
37N	12	10.8 .9	13	11.1 .7	16	11.0 .5	19	10.5 .8	37N
35N	11	12.2 1.0	12	11.7 .9	27	11.3 .5	41	10.9 .7	35N
33N	23	14.2 1.0	13	12.5 .5	8	12.0 .5	57	11.6 1.2	33N
31N	15	14.4 .8	16	13.3 1.1	14	13.0 .8	44	12.9 1.0	31N
29N	83	14.8 .6	10	14.2 1.3	21	13.5 .9	61A	13.3 1.3	29N
27N	178	15.4 .7	17	15.7 1.3	26	15.4 1.2	126	15.5 1.2	27N
25N	39	16.5 .9	21	16.7 1.5	107	16.6 1.2	107	16.9 1.3	25N

MONTH JUN DEPTH 200 METERS NUMBER OF OBSERVATIONS 4259 TABLE 7 6  
175W 165W 155W 145W

53N	142	3.6 .4	129	3.8 .5	54	4.3 .5	32	4.6 .8	53N
51N	297	3.9 .5	54	4.3 .6	44	3.9 .5	33	4.3 .5	51N
49N	135	3.7 .4	8	4.4 .9	24	3.7 .4	1129	4.2 .5	49N
47N	45	3.7 .6	10	4.4 .6	25	4.9 .7	20	5.4 .8	47N
45N	1A	5.2 .7	16	5.8 .8	20	6.3 .7	24	6.7 .7	45N
43N	71	6.3 .8	19	7.6 .8	37	7.3 .6	28	7.9 .8	43N
41N	20	9.6 .3	29	8.4 .9	36	8.3 .6	41	8.8 .5	41N
39N	20	10.3 .6	25	10.3 1.3	21	10.2 .6	40	9.6 .4	39N
37N	4	10.9 .5	22	11.5 .7	5	10.8 .6	24	9.7 .6	37N
35N	3	12.8 .5	19	12.6 .5	7	12.0 1.1	25	10.7 .5	35N
33N	4	13.7 .5	33	12.8 .7	13	11.8 .3	48	11.7 1.0	33N
31N	16	14.2 1.0	33	13.7 1.1	16	14.0 .7	30	12.9 1.2	31N
29N	45	14.7 .6	44	15.1 1.2	29	13.7 .3	554	13.8 1.2	29N
27N	96	15.3 .7	30	16.0 1.2	16	16.0 1.5	165	15.3 1.2	27N
25N	53	16.7 1.1	54	16.1 1.6	90	16.5 1.4	125	16.4 1.1	25N

MONTH JUL DEPTH 200 METERS NUMBER OF OBSERVATIONS 5079 TABLE 7 7  
175W 165W 155W 145W

53N	132	3.6 .4	128	4.1 .6	164	4.1 .5	36	4.2 .7	53N
51N	358	4.1 .4	140	4.0 .3	62	4.0 .3	35	4.2 .5	51N
49N	212	3.8 .4	87	3.7 .4	52	3.8 .3	1110	4.3 .5	49N
47N	22	4.0 1.0	19	4.1 .5	25	4.7 .8	30	5.2 .4	47N
45N	4	5.7 .4	3	5.8 .5	25	6.1 .6	36	6.8 .6	45N
43N	1	6.6 0	7	7.4 1.1	67	7.9 .6	30	7.5 .8	43N
41N	125	7.5 .6	11	8.7 .3	92	8.8 .7	40	8.6 .7	41N
39N	74	12.6 1.0	76	10.8 .6	86	10.4 .4	67	9.6 .6	39N
37N	10	11.3 .7	28	10.7 .8	32	10.8 .6	65	9.9 .7	37N
35N	5	12.5 1.2	18	12.0 .9	27	11.5 .4	29	10.9 .7	35N
33N	6	13.5 1.2	21	12.4 .8	25	12.2 1.1	28	11.5 .7	33N
31N	11	14.2 .7	9	12.9 .8	34	13.1 .6	51	12.9 1.1	31N
29N	30	15.8 1.1	2	14.3 .7	45	14.2 1.2	629	13.9 1.6	29N
27N	63	16.0 .8	4	15.0 .9	102	15.5 1.2	116	15.7 1.2	27N
25N	31	16.2 1.1	21	16.9 1.0	163	16.4 1.2	114	16.7 1.1	25N

MONTH AUG DEPTH 200 METERS NUMBER OF OBSERVATIONS 5509 TABLE 7 8  
175W 165W 155W 145W

53N	103	3.5 .5	150	4.0 .5	101	4.1 .5	61	4.3 .7	53N
51N	479	4.1 .6	236	3.9 .5	114	3.9 .4	60	4.1 .5	51N
49N	314	3.4 .5	156	3.7 .5	92	3.8 .4	1124	4.3 .8	49N
47N	164	4.2 .6	32	4.2 .6	84	4.7 .8	22	5.2 .5	47N
45N	61	5.6 1.3	24	5.7 .7	52	6.2 .6	43	6.9 .5	45N
43N	39	7.9 .9	18	7.7 .9	73	7.9 .6	32	7.8 .5	43N
41N	61	9.0 .6	8	9.1 .9	58	9.0 .4	40	8.7 .6	41N
39N	77	11.0 1.1	29	11.1 .6	60	10.1 .6	32	9.8 .6	39N
37N	27	11.8 1.2	13	10.5 .9	32	10.9 .5	26	9.9 .8	37N
35N	5	12.0 .7	9	11.9 .6	50	11.3 .5	22	10.5 1.4	35N
33N	14	13.2 1.5	18	13.0 1.1	48	12.6 1.1	16	11.3 .6	33N
31N	5	13.8 .5	15	13.2 .8	47	13.3 .6	26	12.6 .6	31N
29N	12	14.9 1.4	3	13.8 .7	37	13.5 .7	559	14.0 1.1	29N
27N	35	15.6 .9	3	15.7 2.1	99	16.0 1.3	144	15.2 1.1	27N
25N	35	16.9 1.2	6	16.1 1.1	119	16.4 1.3	83	16.3 1.2	25N



MONTH SEP DEPTH 200 METERS NUMBER OF OBSERVATIONS 4400 TABLE 7 9  
175M 165M 155M 145M

53N	36	3.5	.8	82	4.4	.6	42	4.1	.4	25	4.0	.6	53N
51N	92	4.1	.6	72	3.7	.4	68	4.1	.6	45	4.2	.6	51N
49N	54	4.1	.4	41	3.6	.6	36	4.2	.4	1257	4.2	.5	49N
47N	92	4.2	.7	31	4.3	.5	34	5.2	.7	21	5.8	.5	47N
45N	35	5.7	1.0	37	6.1	.7	34	6.5	.7	15	6.6	.4	45N
43N	22	8.4	.8	23	8.0	.6	56	8.2	.6	1	7.5	0	43N
41N	38	9.8	.9	32	8.8	.7	40	9.1	.7	2	9.5	.6	41N
39N	28	10.8	.8	27	10.5	.6	62	10.3	.6	33	9.9	.5	39N
37N	15	12.2	.9	33	11.1	.8	33	10.9	.6	29	10.9	.6	37N
35N	25	12.4	.9	16	11.9	.5	77	11.6	.6	28	11.0	.4	35N
33N	36	13.5	1.1	22	12.3	.6	52	12.4	.5	12	11.1	.6	33N
31N	33	14.2	.6	24	13.3	.7	71	13.2	.6	40	12.8	.8	31N
29N	30	15.0	.8	24	14.0	.6	76	14.0	.8	615	13.9	1.0	29N
27N	41	15.4	.6	29	15.6	1.1	115	15.3	1.3	100	15.1	1.2	27N
25N	46	16.4	1.0	39	16.5	1.2	162	16.2	1.1	82	16.1	1.1	25N

MONTH OCT DEPTH 200 METERS NUMBER OF OBSERVATIONS 4550 TABLE 7 10  
175M 165M 155M 145M

53N	4	3.5	.2	11	4.2	.4	24	4.2	.4	5	4.3	.1	53N
51N	29	4.3	.6	8	4.1	.4	20	4.1	.3	5	4.0	.1	51N
49N	18	4.1	.3	4	4.3	.3	17	4.1	.4	994	4.1	.4	49N
47N	119	4.0	.4	7	4.8	.7	20	5.3	.6	5	5.6	.3	47N
45N	29	5.0	1.1	9	6.0	.4	27	6.3	.7	10	7.1	.5	45N
43N	58	7.3	.8	40	8.0	.7	70	8.3	.8	0	7.7	.4	43N
41N	18	8.6	1.1	49	8.8	1.0	38	8.8	.6	44	9.5	.5	41N
39N	36	10.7	1.0	15	10.1	.6	21	10.1	.5	50	9.8	.5	39N
37N	33	11.5	1.0	13	10.8	.5	13	10.9	.3	64	10.1	.6	37N
35N	56	12.3	.8	10	12.0	.6	15	11.8	.4	72	10.7	.5	35N
33N	63	13.0	.6	16	12.1	.9	23	12.2	.5	92	11.6	.6	33N
31N	35	14.1	.6	16	13.4	.7	39	13.1	.6	47	12.6	.8	31N
29N	51	14.7	.5	25	13.8	.9	44	14.1	1.0	1272	13.4	1.0	29N
27N	210	14.0	1.5	10	15.7	.9	65	15.6	1.1	129	15.1	1.1	27N
25N	52	16.6	.9	27	16.3	1.3	107	16.3	1.1	89	16.5	1.1	25N

MONTH NOV DEPTH 200 METERS NUMBER OF OBSERVATIONS 2905 TABLE 7 11  
175M 165M 155M 145M

53N	2	3.8	.2	0	0	0	10	4.4	.5	4	4.2	.2	53N
51N	3	5.2	.1	0	0	0	10	4.2	.3	0	0	0	51N
49N	13	5.2	.1	4	3.9	.2	11	4.0	.4	999	4.0	.4	49N
47N	56	4.0	.6	10	4.7	.4	12	4.9	.7	9	5.1	.5	47N
45N	9	3.2	.2	12	6.3	.7	14	6.3	.6	10	6.6	.4	45N
43N	26	9.1	.2	6	7.6	.5	79	7.8	.3	9	8.1	.7	43N
41N	23	8.5	.6	7	8.8	.4	52	8.2	.5	5	8.9	.8	41N
39N	41	11.4	.9	15	9.5	.7	11	9.9	.5	18	9.5	.4	39N
37N	1	12.2	0	2	10.2	.2	14	10.8	.6	6	9.6	.9	37N
35N	1	13.0	0	4	11.4	.5	21	11.3	.3	19	11.0	.8	35N
33N	1	13.6	0	6	13.0	.5	19	11.9	.8	13	11.5	.5	33N
31N	15	14.2	.7	20	13.4	.6	24	13.4	.6	35	12.9	.9	31N
29N	32	14.6	.7	18	14.2	1.0	53	13.9	.6	517	13.8	1.1	29N
27N	65	15.3	.8	21	15.2	.8	96	15.6	1.1	84	14.8	1.2	27N
25N	40	16.4	1.2	88	16.4	1.4	98	16.4	1.1	62	15.9	1.3	25N

MONTH DEC DEPTH 200 METERS NUMBER OF OBSERVATIONS 2906 TABLE 7 12  
175M 165M 155M 145M

53N	0	0	0	0	0	0	3	4.1	.3	0	0	0	53N
51N	0	0	0	0	0	0	4	4.0	.2	0	0	0	51N
49N	0	0	0	0	4.2	.2	9	4.0	.2	998	4.0	.4	49N
47N	0	0	0	3	4.7	.7	9	5.1	.6	2	5.4	.2	47N
45N	2	6.0	.9	4	6.3	.2	4	6.7	.5	2	6.3	.1	45N
43N	4	7.7	.6	4	7.8	.3	24	8.3	.7	1	7.2	0	43N
41N	6	9.1	.6	38	8.8	.5	29	8.7	.6	16	8.7	1.0	41N
39N	4	10.0	.1	3	10.2	.0	1	10.2	0	8	9.9	.7	39N
37N	6	10.1	.9	2	10.5	.3	2	10.7	.2	9	10.4	.5	37N
35N	4	11.7	.7	2	11.6	.2	3	11.7	.4	10	11.0	.6	35N
33N	2	11.7	.7	6	12.5	.5	8	12.2	.7	12	11.0	1.4	33N
31N	6	13.5	.7	6	13.2	.4	10	13.1	.5	13	13.2	1.1	31N
29N	17	14.7	.5	11	14.3	.8	23	14.7	.9	484	13.4	1.1	29N
27N	18	15.7	.8	16	15.0	1.1	61	15.8	.8	43	15.1	1.0	27N
25N	11	16.7	1.3	13	16.0	.8	60	16.6	1.0	36	16.2	1.1	25N



MONTH JAN DEPTH 250 METERS NUMBER OF OBSERVATIONS 2400 TABLE A 1  
175M 165M 155M 145M

93N	0 0	3 4.4 .4	17 3.9 .2	15 4.3 .6	93N
91N	3 4.7 .7	5 4.1 .2	14 3.9 .2	3 4.4 .4	91N
89N	0 0	8 3.7 .3	14 3.7 .2	89N 3.8 .3	89N
87N	92 3.3 .6	4 4.4 .5	13 4.0 .6	0 0 0	87N
85N	3 4.5 .3	4 4.1 .4	9 5.5 .4	10 6.3 .4	85N
83N	0 0 0	3 7.7 .7	20 7.2 .5	4 6.9 .3	83N
81N	6 7.8 .7	7 8.0 .5	14 8.5 .6	3 7.7 .1	81N
39N	74 9.5 .4	3 9.6 .4	12 9.7 .8	1 9.2 .7	39N
37N	2 10.4 1.3	8 10.3 .6	9 10.1 .5	4 9.7 .5	37N
35N	3 11.9 .4	10 10.7 .7	89 10.9 .4	10 10.1 .6	35N
33N	4 12.5 .5	14 11.7 .5	49 11.4 .4	13 10.6 .7	33N
31N	10 13.0 .5	12 12.3 .5	24 12.0 .5	21 11.3 .4	31N
29N	13 13.4 .7	11 13.0 .6	25 12.7 .8	434 11.3 .8	29N
27N	30 14.3 .9	34 14.0 .9	104 14.0 1.3	82 12.5 .8	27N
25N	24 15.3 .8	23 14.1 .7	103 14.3 1.3	54 13.3 1.1	25N

MONTH FEB DEPTH 250 METERS NUMBER OF OBSERVATIONS 2750 TABLE A 2  
175M 165M 155M 145M

93N	9 3.8 .2	19 4.4 .5	14 3.9 .3	22 4.0 .4	93N
91N	42 3.8 .2	50 3.9 .3	11 3.9 .1	11 3.9 .2	91N
89N	23 3.7 .3	45 3.8 .2	10 3.8 .1	839 3.8 .3	89N
87N	15 3.8 .7	35 4.3 .4	8 4.5 .4	15 4.9 .5	87N
85N	15 4.1 .5	20 5.5 .5	7 6.0 .7	2 6.1 .5	85N
83N	8 7.7 .8	9 7.1 .4	10 7.4 .5	7 7.8 .6	83N
81N	16 8.3 .9	12 8.5 .5	8 8.1 .6	24 8.7 .5	81N
39N	16 9.4 .5	12 9.5 .7	6 9.2 .4	15 8.8 .5	39N
37N	17 11.0 1.2	15 10.6 .9	17 10.1 .3	19 9.5 .4	37N
35N	3 11.0 .9	5 10.6 .6	164 11.0 .4	11 10.4 .6	35N
33N	5 12.5 .6	7 12.3 .6	87 11.5 .4	23 10.8 .6	33N
31N	6 14.1 .6	7 12.3 .5	31 12.0 .4	22 11.3 .4	31N
29N	7 14.0 1.3	6 13.7 .8	33 12.2 .7	502 11.8 .7	29N
27N	12 14.1 .9	13 13.8 1.0	72 12.9 .6	47 12.6 .8	27N
25N	15 15.3 .8	10 14.5 1.0	75 14.2 .9	99 13.3 1.0	25N

MONTH APR DEPTH 250 METERS NUMBER OF OBSERVATIONS 307A TABLE A 3  
175W 165W 155W 145W

53N	10	3.8	.2	3	3.5	.3	24	4.0	.4	9	4.0	.4	53N
51N	20	3.8	.3	4	3.8	.1	25	3.8	.3	3	3.8	.0	51N
49N	23	3.9	.2	2	4.0	.3	26	3.7	.4	960	3.8	.4	49N
47N	36	3.7	.4	2	4.5	.5	18	4.2	.5	4	4.4	.3	47N
45N	21	4.6	.7	7	5.7	.7	3	5.6	.2	3	6.2	.1	45N
43N	26	6.5	.8	8	7.6	.7	4	6.6	.3	5	7.1	.3	43N
41N	25	8.1	.8	0	0	0	14	8.1	.8	7	8.2	.5	41N
39N	8	9.2	1.0	4	8.8	.3	14	9.3	.0	8	9.0	.2	39N
37N	16	11.2	1.3	5	10.2	.1	20	10.0	.5	15	9.6	.4	37N
35N	52	12.2	.6	9	11.3	.4	17	10.6	.6	30	10.0	.5	35N
33N	78	12.6	.8	16	11.9	.8	14	11.2	.6	43	10.4	.5	33N
31N	65	13.5	.8	36	12.4	.8	25	11.8	.5	38	11.2	.5	31N
29N	53	13.8	1.0	36	12.8	.8	61	12.6	.7	486	11.5	.7	29N
27N	48	14.8	1.0	51	14.1	.9	92	13.1	.8	98	12.5	.6	27N
25N	51	15.5	1.0	116	14.6	1.1	103	13.9	1.1	60	13.0	1.0	25N

MONTH APR DEPTH 250 METERS NUMBER OF OBSERVATIONS 318A TABLE A 4  
175W 165W 155W 145W

53N	13	3.7	.3	13	4.0	.3	15	4.1	.3	11	4.2	.4	53N
51N	9	3.7	.3	21	3.9	.2	27	3.8	.2	13	4.0	.4	51N
49N	18	3.9	.2	23	3.9	.2	17	4.0	.2	1001	3.8	.4	49N
47N	54	4.5	.6	6	4.4	.3	0	4.5	.4	9	4.6	.5	47N
45N	11	4.1	1.1	10	5.7	.7	12	5.3	.5	9	5.5	.5	45N
43N	18	6.8	.6	19	7.2	.6	38	7.2	.4	17	7.2	.4	43N
41N	7	8.0	.7	40	8.1	.5	31	7.9	.4	29	8.6	.6	41N
39N	37	9.9	1.0	46	9.7	.6	4	9.3	.4	20	9.1	.5	39N
37N	31	11.6	.8	31	10.4	.6	6	9.8	.3	15	9.4	.5	37N
35N	28	13.1	.8	16	11.2	.7	11	10.8	.6	28	10.3	.5	35N
33N	18	14.1	.6	12	12.1	.8	18	11.1	.6	37	10.5	.8	33N
31N	47	13.7	.8	25	12.9	.8	14	11.9	.4	45	11.3	.5	31N
29N	64	14.1	.5	39	13.2	1.1	58	12.7	.7	459	11.3	.8	29N
27N	59	14.5	.7	40	14.5	1.6	65	13.5	1.3	89	12.6	.9	27N
25N	28	15.4	.8	128	14.1	1.3	125	14.1	1.1	41	13.3	1.2	25N



MONTH MAY DEPTH 250 METERS NUMBER OF OBSERVATIONS 3534 TABLE 8 5  
1954 1954

53N	49	3.6	.2	65	4.2	.7	19	4.0	.3	28	4.1	.5	53N
51N	65	4.0	.5	94	4.1	.6	29	4.2	.5	17	4.0	.4	51N
49N	71	3.8	.3	57	3.7	.3	32	3.9	.2	1239	3.8	.5	49N
47N	66	3.1	.9	10	4.0	.6	21	4.2	.8	43	5.0	.5	47N
45N	20	4.9	.7	17	5.3	.8	15	5.2	1.3	21	4.0	.6	45N
43N	12	5.9	.7	5	6.7	.6	16	6.9	.5	2	7.0	.8	43N
41N	5	7.6	.6	10	8.1	.7	14	7.9	.5	3	8.4	.5	41N
39N	26	9.3	.8	13	9.2	.7	15	9.3	.4	7	9.4	.8	39N
37N	12	10.2	.9	13	10.4	.7	16	10.3	.6	16	9.7	.8	37N
35N	11	11.4	.9	11	11.0	1.0	23	10.7	.5	40	10.0	.6	35N
33N	22	13.4	1.0	9	11.7	.6	7	11.3	.4	53	10.4	1.2	33N
31N	15	13.6	.9	13	12.6	1.3	13	12.1	.6	38	11.4	.7	31N
29N	74	13.9	.6	9	13.1	1.1	18	12.3	.8	493	11.3	1.1	29N
27N	161	14.1	.7	13	14.1	1.1	21	13.2	.7	119	12.8	1.0	27N
25N	25	15.0	.8	17	14.4	1.1	88	14.0	1.1	80	14.0	1.0	25N

MONTH JUN DEPTH 250 METERS NUMBER OF OBSERVATIONS 3520 TABLE 8 6  
1954 1954

53N	125	3.8	.3	114	3.8	.4	52	4.1	.5	29	4.4	.7	53N
51N	200	4.0	.4	47	4.2	.6	38	3.9	.3	33	4.1	.8	51N
49N	128	3.7	.3	8	4.3	.8	20	3.7	.3	879	3.9	.4	49N
47N	45	3.6	.5	10	4.2	.6	24	4.5	.5	17	5.1	.6	47N
45N	18	4.7	.7	11	5.5	.6	19	5.9	.5	24	6.1	.8	45N
43N	16	6.5	1.3	16	7.2	.6	36	6.8	.7	28	7.3	.4	43N
41N	20	9.1	.3	27	7.8	.9	33	7.8	.6	41	8.3	.5	41N
39N	8	9.5	.7	22	10.0	.6	19	9.4	.5	36	9.0	.5	39N
37N	4	10.2	.5	7	10.1	.7	5	10.1	.4	18	8.7	.6	37N
35N	3	12.0	.7	9	11.8	.6	6	10.9	.6	20	9.9	.6	35N
33N	4	12.9	.4	27	11.8	.6	13	11.1	.3	46	10.7	.6	33N
31N	15	13.4	1.0	26	12.7	1.1	16	12.8	.8	23	11.1	.5	31N
29N	46	13.8	.6	36	13.6	.8	29	12.5	.3	514	11.7	.8	29N
27N	64	14.2	.7	13	14.2	.8	15	14.2	1.4	100	12.9	.9	27N
25N	38	15.0	1.0	17	14.2	1.5	75	13.9	1.2	95	13.7	1.0	25N

MONTH JUL DEPTH 250 METERS NUMBER OF OBSERVATIONS 4228 TABLE A 7  
175M 165M 155M 145M

53N	125	3.8	.3	105	4.1	.5	141	4.0	.4	18	4.3	.7	53N
51N	308	4.0	.4	120	3.9	.3	58	4.0	.3	27	4.1	.4	51N
49N	203	3.8	.3	85	3.7	.3	42	3.8	.3	993	4.0	.5	49N
47N	22	3.9	.7	19	3.8	.3	22	4.0	.5	21	4.0	.3	47N
45N	4	5.3	.5	2	5.1	.5	22	5.5	.5	27	6.1	.6	45N
43N	1	5.9	0	7	6.8	1.2	66	7.3	.6	24	7.0	.6	43N
41N	125	6.9	.6	11	8.2	.2	79	8.1	.6	34	8.1	.7	41N
39N	20	11.1	1.5	43	10.1	.8	60	9.7	.6	47	9.0	.6	39N
37N	8	10.7	.7	26	10.1	.7	27	10.2	.6	34	9.3	.5	37N
35N	5	11.9	1.1	18	11.4	.8	25	10.8	.3	23	10.1	.6	35N
33N	5	12.5	1.1	18	11.8	.5	23	11.3	.5	21	10.8	.8	33N
31N	7	13.2	.7	7	12.1	.7	32	12.0	.5	44	11.4	.6	31N
29N	17	14.2	.9	1	12.5	0	41	12.7	.9	449	11.5	1.4	29N
27N	49	15.1	.9	3	13.1	.5	88	13.6	1.0	107	12.9	1.0	27N
25N	25	14.7	.7	13	15.3	1.5	138	14.0	1.0	89	13.7	1.0	25N

MONTH AUG DEPTH 250 METERS NUMBER OF OBSERVATIONS 4708 TABLE A 8  
175M 165M 155M 145M

53N	83	3.7	.4	120	3.9	.4	88	4.0	.5	48	4.1	.6	53N
51N	410	4.0	.5	218	3.8	.5	93	3.8	.4	51	4.0	.4	51N
49N	288	3.4	.5	133	3.6	.5	72	3.7	.4	926	4.0	.4	49N
47N	147	4.0	.4	23	4.0	.5	50	4.3	.5	20	4.8	.4	47N
45N	51	5.3	.7	18	5.1	.6	38	5.6	.5	32	6.2	.5	45N
43N	33	7.4	.8	14	6.9	.9	56	7.3	.6	26	7.0	.5	43N
41N	55	8.5	.6	6	8.5	.4	49	8.4	.7	31	8.1	.6	41N
39N	67	10.4	1.0	28	10.4	.7	51	9.4	.5	17	9.3	.7	39N
37N	18	10.9	1.2	13	9.8	.8	26	10.1	.4	20	9.3	1.1	37N
35N	5	11.3	.8	8	11.2	.6	42	10.6	.5	17	9.6	1.6	35N
33N	11	12.8	1.5	17	12.3	1.3	44	11.8	1.1	13	10.5	.5	33N
31N	9	13.0	.5	14	12.3	.7	46	12.1	.5	17	10.9	.5	31N
29N	7	14.2	1.4	3	12.7	.7	37	12.3	.6	511	11.6	.8	29N
27N	35	14.5	.9	3	13.9	1.4	97	14.2	1.2	127	12.7	.8	27N
25N	31	15.6	1.0	4	14.5	.7	119	13.8	1.2	67	13.3	1.0	25N



MONTH SEP DEPTH 250 METERS NUMBER OF OBSERVATIONS 3797 TABLE A 9  
175W 165W 155W 145W

43N	36	3.7	.5	69	4.3	.6	40	4.0	.4	20	4.0	.5	53N
41N	79	4.0	.5	64	3.7	.4	62	4.0	.3	42	4.0	.5	51N
49N	48	4.1	.3	38	3.5	.4	35	4.0	.4	1041	3.9	.4	49N
47N	46	4.1	.6	25	4.1	.5	32	4.8	.9	17	5.4	.5	47N
45N	32	5.1	.9	28	5.4	.6	32	5.9	.7	14	5.9	.4	45N
43N	21	7.5	.7	18	7.3	.8	50	7.5	.6	1	6.8	.0	43N
41N	31	8.6	.9	24	8.3	.9	47	8.5	.6	3	8.9	.7	41N
39N	26	10.1	.8	23	9.9	.7	51	9.8	.5	33	9.2	.5	39N
37N	15	11.4	.9	27	10.4	.7	28	10.3	.5	28	9.8	.6	37N
35N	25	11.5	.8	11	11.1	.5	73	10.9	.5	28	10.3	.4	35N
33N	35	12.6	1.0	18	11.6	.6	45	11.6	.4	12	10.3	.7	33N
31N	32	13.3	.6	13	12.4	.6	61	12.2	.4	40	11.2	.5	31N
29N	23	14.1	.9	17	12.8	.4	70	12.6	.5	515	11.5	.7	29N
27N	30	14.3	.7	28	13.8	.9	105	13.5	1.1	96	12.5	.8	27N
25N	38	15.0	.9	39	14.4	1.0	147	13.8	1.0	69	13.2	1.0	25N

MONTH OCT DEPTH 250 METERS NUMBER OF OBSERVATIONS 3710 TABLE A 10  
175W 165W 155W 145W

53N	4	3.5	.3	9	4.2	.3	24	4.2	.3	5	4.2	.1	53N
51N	24	4.0	.5	5	4.2	.4	20	4.1	.3	5	4.0	.1	51N
49N	14	4.0	.3	4	4.1	.2	15	4.0	.3	826	3.8	.4	49N
47N	101	3.8	.4	7	4.6	.5	19	4.8	.5	5	5.1	.4	47N
45N	26	4.6	.9	6	5.8	.3	22	5.8	.5	9	6.3	.4	45N
43N	28	6.4	.8	10	7.2	.7	35	7.7	.9	9	6.9	.4	43N
41N	18	7.8	1.1	45	8.2	.7	34	8.3	.6	12	8.6	.7	41N
39N	32	9.9	1.0	13	9.4	.6	20	9.5	.4	56	9.1	.4	39N
37N	26	10.8	1.0	13	10.1	.6	13	10.2	.2	55	9.3	.5	37N
35N	42	11.6	.9	10	11.4	.5	14	10.7	.4	66	9.9	.5	35N
33N	54	12.2	.6	15	11.5	.9	23	11.4	.4	86	10.6	.5	33N
31N	25	13.2	.6	16	12.5	.7	38	12.0	.5	75	11.3	.6	31N
29N	45	13.7	.4	24	12.8	.8	40	12.3	.7	943	11.2	.6	29N
27N	203	13.0	1.3	10	14.0	.6	59	13.4	.9	109	12.5	.9	27N
25N	42	15.0	.7	26	14.2	1.1	96	13.7	1.0	78	13.6	1.2	25N

MONTH NOV DEPTH 250 METERS NUMBER OF OBSERVATIONS 2485 TABLE A 11  
175M 165M 155M 145M

53N	2	3.7	.1	0	0	0	10	4.2	.3	3	4.0	.1	53N
51N	3	5.2	.1	0	0	0	9	4.1	.3	0	0	0	51N
49N	5	5.1	.0	4	3.9	.2	10	4.1	.3	133	3.8	.4	49N
47N	28	3.9	.5	10	4.5	.6	12	4.6	.6	8	4.7	.3	47N
45N	3	3.3	.3	11	5.7	.6	14	5.8	.6	10	5.9	.4	45N
43N	23	6.3	.3	6	7.0	.6	78	7.2	.3	9	7.4	.8	43N
41N	14	7.7	.5	7	8.1	.4	48	7.7	.5	5	8.3	.9	41N
39N	73	10.6	.8	15	9.0	.6	10	9.6	.4	16	8.9	.3	39N
37N	1	11.4	0	2	9.6	.1	14	10.2	.8	5	8.8	1.0	37N
35N	1	12.3	0	4	10.7	.5	21	10.6	.4	19	10.3	.8	35N
33N	1	12.6	0	6	12.2	.5	19	11.2	.8	12	10.6	.4	33N
31N	15	13.3	.6	18	12.4	.6	24	12.3	.4	34	11.4	.6	31N
29N	27	13.5	.6	18	13.0	.8	53	12.4	.5	436	11.4	.7	29N
27N	33	14.3	.6	18	13.6	.6	95	13.7	.9	79	12.4	.8	27N
25N	20	15.2	.8	81	14.5	1.2	96	14.0	1.1	54	13.2	1.2	25N

MONTH DEC DEPTH 250 METERS NUMBER OF OBSERVATIONS 1805 TABLE A 12  
175M 165M 155M 145M

53N	0	0	0	0	0	0	3	4.1	.3	0	0	0	53N
51N	0	0	0	0	0	0	4	4.0	.1	0	0	0	51N
49N	0	0	0	1	4.1	0	9	3.9	.2	100	3.7	.4	49N
47N	0	0	0	3	4.5	.7	9	4.4	.5	2	5.0	.3	47N
45N	2	5.4	.6	4	5.6	.2	4	6.0	.4	2	5.8	.1	45N
43N	4	7.0	.6	4	6.9	.2	24	7.7	.7	1	6.6	0	43N
41N	6	8.3	.7	37	8.3	.6	29	8.1	.6	16	8.1	.9	41N
39N	4	9.1	.0	3	9.5	.3	1	9.5	0	8	9.2	.7	39N
37N	6	9.4	.7	2	9.6	.3	2	9.9	.0	9	9.7	.5	37N
35N	4	10.9	.6	2	10.9	.2	3	10.9	.3	9	10.3	.6	35N
33N	2	11.5	1.3	5	11.8	.5	7	11.6	.4	12	10.9	1.5	33N
31N	6	12.7	.6	6	12.2	.3	10	12.1	.4	12	11.3	.7	31N
29N	14	13.7	.6	11	13.1	.4	23	13.0	.5	405	11.4	.7	29N
27N	15	14.4	.8	16	13.5	.8	60	13.9	.7	38	12.4	.5	27N
25N	9	15.6	.9	13	14.0	.4	55	14.0	.9	25	13.2	.9	25N



MONTH JAN DEPTH 300 METERS NUMBER OF OBSERVATIONS 1088 TABLE 9 1  
175M 165M 155M 145M

53N	0	0	0	3	4.3	.4	17	3.8	.1	12	4.2	.4	53N
51N	1	3.7	0	5	4.0	.2	11	3.8	.2	2	4.0	.1	51N
49N	0	0	0	7	3.7	.2	14	3.7	.2	53	3.7	.2	49N
47N	0	0	0	4	4.2	.4	13	4.1	.4	0	0	0	47N
45N	0	0	0	4	4.7	.4	9	5.0	.4	8	5.7	.3	45N
43N	0	0	0	3	6.7	.6	10	6.4	.5	6	6.3	.4	43N
41N	3	6.8	.8	4	7.3	.6	12	7.8	.6	3	7.0	.1	41N
39N	2	7.6	.5	3	8.9	.5	11	8.8	.6	1	8.5	0	39N
37N	2	9.9	1.2	8	9.5	.6	9	9.3	.5	5	9.0	.4	37N
35N	3	11.1	.4	10	10.0	.7	13	10.1	.4	9	9.3	.7	35N
33N	8	11.7	.7	14	11.0	.5	45	10.6	.5	12	9.7	.7	33N
31N	10	12.2	.5	12	11.4	.5	20	11.0	.4	20	10.4	.6	31N
29N	12	12.5	.7	10	11.9	.5	20	11.5	.6	131	10.3	.6	29N
27N	20	13.2	1.0	13	12.8	.8	97	12.5	1.0	71	10.9	.5	27N
25N	20	14.1	.7	23	12.3	.7	90	12.4	1.3	50	11.2	.7	25N

MONTH FEB DEPTH 300 METERS NUMBER OF OBSERVATIONS 1275 TABLE 9 2  
175M 165M 155M 145M

53N	3	3.8	.2	15	4.2	.4	11	3.8	.4	15	4.0	.4	53N
51N	35	3.8	.1	45	3.8	.2	10	3.9	.1	7	3.9	.2	51N
49N	12	3.7	.2	55	3.8	.2	9	3.8	.1	49	3.8	.2	49N
47N	5	3.6	.4	33	4.1	.4	8	4.2	.3	7	4.8	.4	47N
45N	4	4.1	.5	15	5.0	.4	5	5.3	.5	2	5.6	.6	45N
43N	8	6.9	.9	8	6.5	.5	9	6.8	.3	5	7.2	.6	43N
41N	16	7.5	.8	12	8.0	.7	8	7.5	.5	9	8.1	.9	41N
39N	16	8.5	.6	12	8.9	.6	5	8.8	.4	15	8.2	.5	39N
37N	14	10.3	1.3	12	9.5	.4	14	9.4	.4	16	8.8	.5	37N
35N	3	10.2	1.0	5	9.9	.5	162	10.2	.4	10	9.5	.5	35N
33N	5	11.7	.6	6	11.3	.6	76	10.6	.3	19	9.8	.5	33N
31N	6	13.2	.6	6	11.5	.4	24	11.2	.4	18	10.2	.4	31N
29N	7	12.9	1.1	5	12.8	.7	18	11.4	.5	131	10.3	.6	29N
27N	10	12.8	.6	9	12.5	.7	62	11.7	.4	62	11.0	.7	27N
25N	5	13.5	.8	5	12.8	.9	37	12.0	.7	60	11.8	.8	25N

MONTH MAR DEPTH 300 METERS NUMBER OF OBSERVATIONS 1321 TABLE 9 3  
175M 165M 155M 145M

53N	10	3.8	.2	3	3.5	.3	20	3.9	.3	8	3.9	.2	53N
51N	19	3.9	.2	4	3.8	.1	21	3.8	.1	3	3.7	.0	51N
49N	9	3.7	.2	1	3.7	.0	23	3.8	.2	90	3.8	.3	49N
47N	7	3.6	.3	4	4.5	.6	15	4.2	.3	3	4.4	.1	47N
45N	9	4.2	.6	4	5.1	.7	3	5.2	.2	3	5.6	.1	45N
43N	9	5.8	.6	2	6.8	.4	3	5.9	.3	5	6.4	.3	43N
41N	8	7.0	.4	0	0	.0	5	7.5	.6	7	7.5	.5	41N
39N	1	7.5	.0	4	8.2	.3	4	7.7	.7	8	8.3	.2	39N
37N	12	10.1	1.4	5	9.5	.1	11	9.2	.3	12	8.9	.5	37N
35N	42	11.4	.7	5	10.4	.6	11	10.0	.5	15	9.1	.5	35N
33N	63	11.4	.5	7	11.1	1.0	5	10.2	.3	30	9.6	.5	33N
31N	50	12.4	.6	17	11.4	.6	22	11.0	.4	32	10.2	.4	31N
29N	31	12.3	.9	11	11.6	.5	54	11.3	.5	144	10.3	.5	29N
27N	28	13.4	.8	23	12.7	.7	79	11.7	.6	76	11.0	.5	27N
25N	19	14.1	1.3	69	12.8	.9	87	12.1	.9	50	11.4	.7	25N

MONTH APR DEPTH 300 METERS NUMBER OF OBSERVATIONS 1487 TABLE 9 4  
175M 165M 155M 145M

53N	11	3.8	.1	13	4.0	.3	14	4.0	.2	11	4.0	.3	53N
51N	9	3.7	.2	21	3.8	.2	26	3.8	.2	13	3.9	.2	51N
49N	14	3.9	.2	22	3.9	.2	17	4.0	.2	83	3.8	.3	49N
47N	9	4.0	.5	6	4.2	.3	4	4.3	.3	5	4.4	.3	47N
45N	3	5.1	.9	10	5.2	.6	8	5.0	.5	5	5.1	.2	45N
43N	18	5.8	.4	19	6.5	.5	38	6.5	.4	16	6.4	.4	43N
41N	7	7.3	.7	40	7.4	.5	31	7.2	.5	29	7.8	.7	41N
39N	11	8.7	.8	45	9.0	.6	4	8.5	.2	20	8.2	.5	39N
37N	11	10.1	.6	31	9.8	.6	6	9.0	.2	15	8.7	.5	37N
35N	7	11.4	1.1	15	10.4	.6	9	10.1	.6	17	9.5	.5	35N
33N	1	11.6	.0	8	11.1	.9	18	10.3	.6	34	9.6	.8	33N
31N	14	12.6	1.2	17	11.7	.4	14	11.1	.3	37	10.3	.6	31N
29N	23	12.9	.4	28	11.9	.7	50	11.4	.6	140	10.5	.6	29N
27N	18	13.2	.7	27	12.7	1.8	58	12.0	1.4	70	11.0	.6	27N
25N	11	13.0	.5	95	11.8	.8	97	12.1	.8	28	11.3	.8	25N



MONTH MAY DEPTH 300 METERS NUMBER OF OBSERVATIONS 1370 TABLE 9 5  
175M 165M 155M 145M

53N	45	3.6	.1	45	4.1	.5	10	3.9	.2	16	4.0	.4	53N
51N	33	3.7	.3	45	3.9	.3	13	4.0	.2	11	3.9	.1	51N
49N	50	3.7	.3	38	3.7	.2	22	3.9	.1	00	3.8	.3	49N
47N	15	3.8	.5	8	3.9	.5	9	4.3	.2	17	4.5	.3	47N
45N	14	4.5	.6	7	5.3	.6	12	5.3	.4	15	5.4	.5	45N
43N	5	5.9	.6	4	5.9	.5	15	4.3	.4	1	5.4	.7	43N
41N	1	8.2	.0	8	7.6	.7	14	7.2	.5	2	7.2	.0	41N
39N	5	8.3	.9	11	8.7	.7	14	8.7	.4	7	8.7	.8	39N
37N	6	9.3	.4	9	9.6	.8	13	9.5	.5	16	8.9	.7	37N
35N	8	10.9	.8	7	9.9	1.0	21	9.9	.5	36	9.3	.8	35N
33N	8	12.1	.8	6	10.7	.3	7	10.6	.5	41	9.7	1.3	33N
31N	7	12.6	1.1	10	11.9	1.4	13	11.2	.4	29	10.3	.6	31N
29N	14	12.5	.5	6	12.4	.9	13	11.5	.7	158	10.5	.5	29N
27N	17	13.5	.6	4	12.5	.6	16	11.9	.6	110	11.1	.6	27N
25N	15	13.8	.6	3	12.7	.8	69	12.1	.8	68	11.8	.8	25N

MONTH JUN DEPTH 300 METERS NUMBER OF OBSERVATIONS 1629 TABLE 9 6  
175M 165M 155M 145M

53N	70	3.8	.2	79	3.7	.3	23	4.0	.3	16	4.2	.6	53N
51N	113	3.8	.3	29	3.9	.2	18	3.9	.2	18	4.0	.3	51N
49N	60	3.6	.4	4	3.8	.2	14	3.8	.2	78	4.0	.4	49N
47N	22	3.7	.5	8	4.2	.6	14	4.1	.3	13	4.7	.4	47N
45N	4	4.6	.7	9	5.0	.3	12	5.2	.5	17	5.3	.7	45N
43N	9	6.1	1.1	7	6.1	.4	28	6.2	.5	22	6.5	.4	43N
41N	12	8.2	.4	20	7.0	.5	30	7.0	.6	32	7.5	.5	41N
39N	4	8.6	.7	7	8.8	.4	11	8.5	.4	21	8.2	.5	39N
37N	4	9.7	.4	6	9.3	.6	5	9.4	.4	12	7.9	.8	37N
35N	3	11.1	.7	5	10.7	.6	6	10.2	.6	11	9.2	.7	35N
33N	4	12.0	.2	15	10.9	.6	13	10.4	.3	86	9.8	.6	33N
31N	15	12.7	1.0	16	12.1	1.3	16	11.8	.7	22	10.0	.5	31N
29N	7	13.0	.9	19	12.3	.9	29	11.6	.2	195	10.6	.5	29N
27N	28	13.3	.8	7	12.3	.6	14	12.5	.8	128	11.2	.7	27N
25N	20	13.8	1.1	13	13.1	1.6	63	12.1	.9	74	11.7	.8	25N

MONTH JUL DEPTH 300 METERS NUMBER OF OBSERVATIONS 1917 TABLE 9 7  
175W 165W 155W 145W

53N	63	3.7	.2	47	4.0	.4	43	4.0	.3	13	4.1	.4	53N
51N	160	3.9	.4	33	3.9	.3	37	3.9	.3	22	4.0	.3	51N
49N	118	3.7	.3	30	3.8	.3	23	3.9	.2	75	3.7	.2	49N
47N	21	3.9	.6	10	3.8	.2	13	4.4	.4	6	4.6	.3	47N
45N	4	4.8	.4	1	4.9	0	15	5.0	.3	10	5.5	.4	45N
43N	0	0	0	4	7.1	.7	58	6.7	.5	7	6.0	.3	43N
41N	125	6.3	.6	11	7.5	.3	60	7.2	.5	18	7.6	.4	41N
39N	3	8.0	.8	4	8.5	.5	25	8.7	.5	22	8.1	.5	39N
37N	5	9.8	.9	12	9.4	.3	22	9.5	.5	25	8.7	.5	37N
35N	4	10.8	1.1	10	10.1	.4	24	9.9	.4	20	9.1	.5	35N
33N	5	11.7	1.0	16	11.1	.5	22	10.5	.5	15	9.7	.9	33N
31N	3	12.7	.8	5	11.0	.5	31	11.1	.5	38	10.4	.7	31N
29N	6	12.7	.6	1	11.6	0	34	11.7	.7	144	10.5	.6	29N
27N	19	13.6	.9	3	12.3	.4	75	12.2	.7	87	11.3	.6	27N
25N	20	13.3	.6	7	13.7	1.0	116	12.1	.7	67	11.6	.7	25N

MONTH AUG DEPTH 300 METERS NUMBER OF OBSERVATIONS 2050 TABLE 9 8  
175W 165W 155W 145W

53N	41	3.8	.5	42	3.8	.4	43	4.1	.5	30	4.1	.4	53N
51N	238	3.9	.3	81	3.9	.2	48	3.9	.3	31	3.9	.2	51N
49N	69	3.8	.2	41	3.7	.2	49	3.7	.2	95	3.9	.3	49N
47N	30	3.8	.2	15	4.0	.1	38	4.1	.4	15	4.4	.3	47N
45N	16	4.6	.6	4	4.1	.3	24	4.9	.3	12	5.5	.3	45N
43N	5	5.8	.2	5	6.0	.7	40	6.5	.6	19	6.3	.5	43N
41N	7	7.3	.6	5	7.5	.4	33	7.2	.6	26	7.4	.7	41N
39N	8	8.6	1.0	6	8.6	.3	37	8.4	.5	11	8.4	.9	39N
37N	13	9.8	1.3	10	9.4	.6	22	9.2	.4	16	8.6	1.5	37N
35N	4	10.4	.9	7	10.2	.3	39	9.8	.5	12	8.4	2.0	35N
33N	11	12.0	1.6	10	11.5	1.6	41	10.9	1.1	13	9.7	.5	33N
31N	5	12.3	.5	5	11.4	.4	42	11.1	.6	9	10.2	.5	31N
29N	2	15.2	1.4	2	11.3	.0	33	11.2	.5	184	10.4	.6	29N
27N	24	13.2	.9	3	12.2	.9	92	12.5	.8	91	11.0	.5	27N
25N	23	13.8	.9	3	12.9	.7	113	11.8	.9	61	11.8	.8	25N



MONTH SEP DEPTH 300 METERS NUMBER OF OBSERVATIONS 1995 TABLE 9 9  
175W 165W 155W 145W

53N	30 3.7 .1	44 4.0 .3	31 3.9 .3	8 3.9 .2	53N
51N	50 3.4 .3	41 3.8 .1	46 3.8 .2	23 3.9 .3	51N
49N	9 3.6 .1	17 3.6 .2	32 4.0 .5	94 3.8 .4	49N
47N	8 3.6 .3	13 4.2 .5	29 4.5 .8	15 5.0 .4	47N
45N	9 4.5 .7	12 4.8 .5	31 5.3 .7	14 5.4 .4	45N
43N	5 6.2 .7	9 6.4 .5	48 6.6 .4	1 6.1 0	43N
41N	7 7.1 .7	18 7.5 .9	43 7.6 .5	4 8.2 .7	41N
39N	8 8.7 .5	14 9.3 .7	42 8.8 .5	33 8.6 .5	39N
37N	8 10.5 1.1	22 9.6 .7	23 9.4 .3	18 9.0 .7	37N
35N	13 10.4 .6	8 10.3 .5	50 10.2 .4	22 9.4 .5	35N
33N	24 11.7 .7	12 10.7 .6	39 10.7 .4	9 9.9 .6	33N
31N	20 12.2 .4	7 11.4 .6	41 11.2 .3	34 10.2 .5	31N
29N	14 12.7 .6	11 11.8 .4	50 11.5 .4	224 10.4 .6	29N
27N	15 13.0 .7	13 12.4 .8	90 12.0 .7	92 10.9 .6	27N
25N	26 13.8 .7	28 12.4 .8	130 11.9 .7	64 11.2 .6	25N

MONTH OCT DEPTH 300 METERS NUMBER OF OBSERVATIONS 1759 TABLE 9 10  
175W 165W 155W 145W

53N	3 3.4 .2	6 4.2 .2	23 4.1 .3	5 4.1 .1	53N
51N	18 4.1 .4	3 4.3 .3	20 4.0 .2	5 4.0 .1	51N
49N	19 3.9 .3	4 4.0 .1	14 4.0 .2	59 3.8 .3	49N
47N	15 4.2 .4	7 4.4 .4	16 4.4 .5	4 4.8 .4	47N
45N	17 4.8 .7	5 5.5 .3	20 5.3 .4	8 5.7 .3	45N
43N	27 5.8 .6	10 6.6 .7	35 6.9 .9	8 6.2 .3	43N
41N	14 6.8 .8	29 7.4 .7	32 7.6 .7	11 7.9 .5	41N
39N	14 8.4 .4	9 9.1 .7	19 8.8 .4	53 8.5 .3	39N
37N	11 10.4 1.0	9 9.6 .6	13 9.5 .2	49 8.6 .5	37N
35N	27 10.7 1.1	10 10.8 .5	13 9.9 .4	58 9.0 .5	35N
33N	40 11.4 .6	15 10.9 .8	23 10.6 .4	63 9.8 .5	33N
31N	13 12.3 .8	15 11.8 .6	32 11.2 .4	63 10.4 .8	31N
29N	20 12.7 .5	23 11.9 .8	22 11.5 .4	223 10.3 .6	29N
27N	177 11.9 1.0	8 12.7 .6	42 11.9 .7	95 10.8 .7	27N
25N	14 13.2 .5	25 12.4 .9	64 11.8 .6	64 11.5 .7	25N

MONTH NOV DEPTH 300 METERS NUMBER OF OBSERVATIONS 1196 TABLE 9 11  
175M 165M 155M 145M

53N	2	3.7	.1	0	0	0	10	4.1	.3	3	3.9	.1	53N
51N	0	0	0	0	0	0	9	4.1	.3	0	0	0	51N
49N	0	0	0	3	3.8	.1	10	4.0	.3	42	3.7	.2	49N
47N	0	0	0	10	4.3	.5	12	4.4	.5	8	4.4	.3	47N
45N	0	0	0	11	4.3	.6	14	5.3	.5	9	5.4	.4	45N
43N	2	6.8	.1	6	6.8	.6	77	6.9	.4	9	6.7	.8	43N
41N	5	6.4	.4	7	7.3	.4	47	7.0	.6	4	8.1	.2	41N
39N	11	9.1	.8	15	8.4	.6	10	8.9	.5	15	8.2	.3	39N
37N	0	0	0	2	9.1	.0	14	9.4	.6	5	8.0	1.1	37N
35N	1	11.5	0	4	9.9	.4	21	9.8	.4	17	9.4	.9	35N
33N	1	11.7	0	6	11.4	.5	19	10.3	.8	11	9.7	.5	33N
31N	13	12.3	.6	17	11.6	.5	24	11.4	.4	33	10.4	.6	31N
29N	23	12.5	.6	14	12.1	.6	52	11.3	.4	126	10.1	.7	29N
27N	28	13.2	.7	18	12.2	.3	94	12.1	.6	77	10.9	.6	27N
25N	17	13.6	.5	71	12.8	1.0	89	12.1	.9	46	11.2	.8	25N

MONTH DEC DEPTH 300 METERS NUMBER OF OBSERVATIONS 704 TABLE 9 12  
175M 165M 155M 145M

53N	0	0	0	0	0	0	3	3.9	.1	0	0	0	53N
51N	0	0	0	0	0	0	4	3.9	.1	0	0	0	51N
49N	0	0	0	1	4.3	0	9	3.9	.2	51	3.8	.2	49N
47N	0	0	0	3	4.5	.6	9	4.5	.3	2	4.8	.3	47N
45N	2	4.9	.6	0	5.3	.3	4	5.8	.7	2	5.3	.0	45N
43N	4	6.2	.6	4	6.2	.3	24	7.0	.7	1	6.1	0	43N
41N	6	7.1	.7	37	7.5	.6	27	7.4	.5	15	7.6	.7	41N
39N	4	8.6	.1	3	8.9	.4	1	8.8	0	8	8.5	.7	39N
37N	6	8.6	.8	2	8.9	.2	2	9.2	.0	9	8.8	.4	37N
35N	4	10.2	.6	2	10.0	.4	3	10.2	.3	7	9.6	.6	35N
33N	2	12.3	3.0	5	11.0	.5	7	10.8	.3	12	10.0	1.6	33N
31N	6	11.9	.5	6	11.3	.3	10	11.3	.4	11	10.2	.5	31N
29N	14	12.7	.7	11	12.0	.5	23	11.8	.4	111	10.2	.7	29N
27N	14	13.3	.6	15	12.0	.7	60	12.1	.6	34	11.0	.7	27N
25N	9	14.2	1.0	13	12.4	.5	43	12.1	.7	23	11.4	.4	25N



MONTH JAN DEPTH 400 METERS NUMBER OF OBSERVATIONS 1402 TABLE 10 1  
1954 1954 1954

53N	0	0	0	3	4.0	.3	17	3.7	.1	12	4.9	.4	53N
51N	0	0	0	5	3.9	.1	11	3.7	.2	2	3.8	.0	51N
49N	0	0	0	6	3.7	.2	14	3.6	.1	49	3.7	.1	49N
47N	0	0	0	4	4.0	.3	12	3.8	.2	0	0	0	47N
45N	0	0	0	4	4.5	.6	9	4.4	.3	8	4.8	.2	45N
43N	0	0	0	3	5.7	.3	19	5.3	.4	6	5.3	.4	43N
41N	2	5.4	.6	6	5.9	.3	11	6.1	.5	3	5.6	.2	41N
39N	2	6.4	.3	3	7.2	.7	10	7.1	.4	1	7.0	0	39N
37N	2	8.3	1.0	7	8.1	.5	9	7.7	.4	5	7.3	.5	37N
35N	3	9.0	.5	10	8.3	.8	82	8.5	.8	8	7.3	.6	35N
33N	8	9.0	.7	14	9.3	.6	45	8.9	.6	11	7.9	.7	33N
31N	10	10.5	.4	12	9.6	.5	18	9.1	.4	19	8.2	.4	31N
29N	12	10.6	.5	10	10.0	.4	19	9.5	.8	13	8.1	.6	29N
27N	24	11.1	1.3	21	10.4	.6	63	9.8	1.2	68	8.5	.5	27N
25N	18	11.6	.7	15	9.7	.9	84	9.8	1.4	49	8.6	.6	25N

MONTH FEB DEPTH 400 METERS NUMBER OF OBSERVATIONS 1236 TABLE 10 2  
1954 1954 1954

53N	3	3.8	.1	14	3.9	.2	9	3.7	.4	15	3.9	.3	53N
51N	33	3.8	.2	44	3.7	.2	9	3.8	.1	7	3.8	.2	51N
49N	12	3.6	.1	55	3.7	.2	8	3.7	.1	43	3.7	.2	49N
47N	5	3.6	.3	31	3.9	.3	8	4.0	.1	7	4.4	.6	47N
45N	3	3.8	.3	15	4.3	.3	4	4.6	.5	2	5.0	.6	45N
43N	8	5.8	.5	8	5.8	.5	9	5.5	.3	5	6.1	.8	43N
41N	15	6.2	.5	11	6.0	.8	8	6.2	.7	9	6.4	.6	41N
39N	15	6.9	.6	11	7.3	.5	5	6.8	.3	15	6.6	.5	39N
37N	13	8.5	1.3	12	7.9	.3	12	7.7	.4	16	7.1	.6	37N
35N	3	8.8	1.2	5	8.4	.3	162	8.6	.5	10	7.6	.5	35N
33N	5	9.9	.6	6	9.5	.6	76	8.9	.8	18	7.9	.6	33N
31N	6	11.3	.6	6	9.9	.4	23	9.8	.4	18	8.3	.6	31N
29N	7	10.9	.8	5	10.6	.8	18	9.4	.4	127	8.1	.5	29N
27N	10	10.8	.4	8	10.2	.7	59	9.5	.5	62	8.6	.6	27N
25N	5	11.0	.8	5	10.4	.8	36	9.3	.5	59	8.8	.8	25N

MONTH APR DEPTH 400 METERS NUMBER OF OBSERVATIONS 1225 TABLE 10 3  
175W 165W 155W 145W

53N	10	3.7	.1	3	3.8	.3	19	3.7	.2	7	3.7	.2	53N
51N	15	3.9	.1	4	3.7	.1	21	3.7	.1	3	3.7	.0	51N
49N	9	3.6	.1	1	3.7	0	22	3.7	.2	11	3.7	.2	49N
47N	7	3.6	.2	4	4.3	.6	13	4.0	.2	3	4.0	.0	47N
45N	9	3.9	.4	4	4.8	.5	2	4.4	.1	1	4.6	0	45N
43N	9	4.9	.4	1	5.4	0	3	5.0	.3	5	5.1	.2	43N
41N	8	5.6	.3	0	0	0	5	6.1	.5	7	6.0	.4	41N
39N	1	5.9	0	4	6.7	.4	4	6.4	.8	8	6.6	.2	39N
37N	12	8.5	1.2	5	8.1	.2	11	7.6	.4	12	7.2	.5	37N
35N	42	9.5	.6	5	8.7	.7	11	8.4	.6	15	7.4	.4	35N
33N	63	9.5	.5	7	9.3	1.0	4	8.6	.2	30	7.7	.5	33N
31N	49	10.4	.6	17	9.6	.5	22	9.0	.4	32	8.2	.4	31N
29N	30	10.3	.8	11	9.8	.3	52	9.1	.6	142	8.2	.5	29N
27N	26	11.1	.8	5	9.9	.8	62	9.2	.5	72	8.6	.5	27N
25N	18	11.5	1.2	58	9.9	.9	70	9.1	.6	49	8.8	.5	25N

MONTH APR DEPTH 400 METERS NUMBER OF OBSERVATIONS 1307 TABLE 10 4  
175W 165W 155W 145W

53N	11	3.7	.1	13	3.8	.3	14	3.9	.2	10	3.8	.2	53N
51N	9	3.7	.2	20	3.7	.1	23	3.7	.2	11	3.8	.2	51N
49N	18	3.8	.1	20	3.8	.2	16	3.9	.2	74	3.7	.2	49N
47N	8	3.8	.4	6	3.9	.1	4	4.1	.1	4	4.1	.1	47N
45N	3	4.7	1.0	10	4.5	.3	8	4.4	.2	5	4.3	.1	45N
43N	18	5.0	.3	19	5.3	.4	37	5.4	.3	16	5.2	.3	43N
41N	7	6.0	.4	40	6.0	.3	31	5.9	.4	26	6.2	.5	41N
39N	11	6.9	.6	45	7.4	.6	4	7.0	.2	19	6.6	.5	39N
37N	9	8.2	.7	30	8.1	.5	6	7.2	.2	15	7.0	.5	37N
35N	7	9.7	1.2	14	8.9	.5	7	8.5	.6	16	7.8	.5	35N
33N	1	9.5	0	8	9.3	.9	18	8.4	.6	31	7.9	.6	33N
31N	15	10.8	1.6	17	9.9	.4	14	9.2	.3	37	8.3	.7	31N
29N	23	10.9	.5	18	10.1	.5	33	9.5	.6	137	8.3	.5	29N
27N	18	11.2	.7	7	10.1	.4	16	9.5	.5	66	8.6	.5	27N
25N	11	11.2	.5	78	9.1	.7	65	9.4	.7	28	8.7	.5	25N



MONTH MAY DEPTH 400 METERS NUMBER OF OBSERVATIONS 1319 TABLE 10 5  
175M 165M 155M 145M

53N	45	3.6	.1	43	3.4	.3	10	3.8	.2	16	3.9	.4	53N
51N	33	3.7	.2	44	3.6	.2	13	3.9	.3	10	3.8	.2	51N
49N	58	3.7	.2	37	3.7	.1	22	3.8	.2	42	3.7	.2	49N
47N	14	3.7	.3	8	3.6	.3	9	4.0	.1	16	4.1	.2	47N
45N	14	4.2	.5	6	4.5	.4	11	4.6	.3	14	4.6	.3	45N
43N	5	4.9	.3	4	4.8	.2	14	5.2	.3	1	4.5	.0	43N
41N	1	6.5	.0	8	4.3	.7	13	5.8	.4	2	5.8	.0	41N
39N	5	8.8	.0	11	7.2	.7	14	7.0	.4	7	7.0	1.0	39N
37N	6	7.5	.5	9	8.0	.8	11	7.8	.6	14	7.1	.7	37N
35N	8	9.0	.4	7	8.4	.9	21	8.3	.5	35	7.5	.6	35N
33N	8	10.3	.7	6	9.1	.3	7	8.9	.5	40	7.9	1.2	33N
31N	7	10.8	1.1	9	9.9	1.0	13	9.5	.4	28	8.3	.7	31N
29N	13	10.7	.4	5	10.2	.8	12	9.5	.7	15	8.3	.5	29N
27N	17	11.2	.6	4	10.4	.5	15	9.5	.6	107	8.6	.4	27N
25N	15	11.2	.5	2	10.2	.8	46	9.3	.6	46	9.0	.6	25N

MONTH JUN DEPTH 400 METERS NUMBER OF OBSERVATIONS 1502 TABLE 10 6  
175M 165M 155M 145M

53N	64	3.7	.2	73	3.7	.2	22	3.9	.2	13	4.0	.5	53N
51N	101	3.8	.2	27	3.8	.2	18	3.7	.2	16	3.9	.2	51N
49N	67	3.5	.1	3	3.7	.1	14	3.8	.4	48	3.8	.3	49N
47N	22	3.6	.3	8	4.1	.6	14	3.9	.2	13	4.3	.3	47N
45N	4	4.2	.5	9	4.7	.3	12	4.5	.4	15	4.6	.4	45N
43N	7	5.4	.8	7	5.0	.3	27	5.2	.5	22	5.2	.4	43N
41N	12	6.6	.3	20	5.6	.3	29	5.7	.6	30	6.1	.4	41N
39N	4	7.0	.6	7	7.2	.4	11	7.0	.4	20	6.5	.5	39N
37N	4	8.1	.5	6	7.7	.5	5	7.8	.2	9	6.7	.7	37N
35N	3	9.5	.6	4	8.8	.4	4	8.3	.7	10	7.6	.4	35N
33N	4	10.3	.4	13	9.3	.4	13	8.6	.4	46	7.9	.6	33N
31N	15	11.0	1.1	16	10.3	1.2	15	10.0	.7	22	8.0	.8	31N
29N	7	10.9	1.0	16	10.2	.8	28	9.8	.3	192	8.4	.8	29N
27N	27	11.1	.8	5	9.8	.5	14	10.1	.7	127	8.8	.7	27N
25N	20	11.3	1.0	12	10.8	1.3	62	9.4	.8	72	8.9	.6	25N

MONTH JUL DEPTH 400 METERS NUMBER OF OBSERVATIONS 1817 TABLE 10 7  
175M 165M 155M 145M

43N	56	3.7	.1	41	3.8	.3	38	3.8	.2	12	4.0	.4	43N
51N	146	3.8	.4	29	3.7	.3	37	3.8	.3	22	3.9	.3	51N
49N	106	3.6	.4	28	3.7	.4	22	3.7	.2	59	3.7	.2	49N
47N	21	3.8	.4	6	3.8	.1	12	4.1	.3	6	4.2	.3	47N
45N	4	4.4	.2	1	4.6	0	15	4.5	.2	10	4.6	.2	45N
43N	0	0	0	4	5.6	.4	57	5.4	.4	7	4.9	.3	43N
41N	125	5.1	.6	11	6.1	.3	40	5.8	.4	17	6.2	.2	41N
39N	3	6.5	.6	4	7.4	.7	24	7.1	.6	20	6.5	.4	39N
37N	5	8.1	.8	12	7.8	.4	22	7.8	.5	24	7.0	.5	37N
35N	3	9.3	1.2	10	8.5	.4	24	8.3	.4	20	7.4	.4	35N
33N	5	9.7	1.0	16	9.6	.8	21	8.7	.6	13	8.1	.7	33N
31N	3	10.7	.7	9	9.3	.4	30	9.2	.7	36	8.4	.7	31N
29N	6	10.8	.6	1	10.0	0	33	9.6	.8	144	8.3	.6	29N
27N	19	11.3	.8	3	10.2	.4	72	9.9	.4	83	8.8	.5	27N
25N	19	10.9	.6	6	10.7	.8	111	9.5	.5	66	8.9	.5	25N

MONTH AUG DEPTH 400 METERS NUMBER OF OBSERVATIONS 1755 TABLE 10 8  
175M 165M 155M 145M

43N	36	3.7	.3	39	3.7	.3	36	4.0	.5	29	3.9	.3	43N
41N	228	3.8	.2	77	3.7	.1	39	3.8	.4	31	3.8	.2	41N
49N	62	3.5	.1	17	3.6	.2	36	3.4	.2	82	3.8	.2	49N
47N	28	3.6	.2	14	3.8	.2	30	3.9	.3	15	4.2	.2	47N
45N	16	4.2	.4	4	3.9	.1	14	4.3	.2	12	4.7	.2	45N
43N	5	4.7	.2	5	4.8	.4	29	5.2	.4	18	5.2	.5	43N
41N	7	5.7	.5	5	6.0	.3	15	6.0	.4	26	6.0	.6	41N
39N	8	7.1	1.2	6	7.1	.3	14	7.1	.5	11	6.8	.8	39N
37N	13	8.1	1.1	10	7.9	.4	11	7.9	.4	15	7.3	.8	37N
35N	4	8.5	.7	7	8.6	.3	13	8.0	.4	12	6.7	1.7	35N
33N	11	10.3	1.7	10	9.6	1.5	17	9.6	1.4	13	7.9	.5	33N
31N	5	10.5	.3	5	9.6	.2	19	9.5	.6	9	8.2	.6	31N
29N	2	12.9	.8	2	9.3	.1	19	9.2	.5	182	8.1	.4	29N
27N	21	11.0	1.0	3	10.0	.5	70	10.1	.6	91	8.7	.5	27N
25N	23	11.1	.7	5	10.2	.4	88	9.1	.7	61	8.8	.6	25N



MONTH SEP DEPTH 400 METERS NUMBER OF OBSERVATIONS 1707 TABLE 10 9  
175M 165M 155M 145M

53N	30	3.6	.1	41	3.9	.2	19	3.8	.2	4	3.8	.2	53N
51N	50	3.7	.1	41	3.7	.1	35	3.8	.1	21	3.8	.2	51N
49N	9	3.5	.1	16	3.6	.1	22	3.9	.3	83	3.8	.2	49N
47N	8	3.5	.2	13	4.0	.5	14	4.6	.4	15	4.5	.4	47N
45N	9	4.3	.5	12	4.2	.3	23	4.7	.7	13	4.6	.3	45N
43N	5	5.2	.6	9	5.3	.4	34	5.4	.4	1	5.0	.0	43N
41N	5	5.7	.3	18	6.1	.7	34	6.2	.6	3	7.1	.1	41N
39N	8	6.9	.4	13	7.8	.7	33	7.4	.5	33	7.0	.5	39N
37N	6	8.7	.9	22	8.1	.7	19	7.7	.3	14	7.3	.6	37N
35N	13	8.6	.7	8	8.7	.5	39	8.5	.4	22	7.6	.5	35N
33N	23	9.9	.7	12	9.0	.4	31	8.9	.4	9	7.9	.7	33N
31N	19	10.2	.5	7	9.6	.7	32	9.4	.4	32	8.2	.5	31N
29N	14	10.7	.6	11	10.1	.4	39	9.5	.4	224	8.3	.6	29N
27N	14	11.0	.7	13	9.9	.4	75	9.7	.6	91	8.5	.5	27N
25N	26	11.3	.6	27	9.7	.4	113	9.3	.7	62	8.6	.5	25N

MONTH OCT DEPTH 400 METERS NUMBER OF OBSERVATIONS 1694 TABLE 10 10  
175M 165M 155M 145M

53N	2	3.4	.0	6	4.0	.2	20	3.9	.4	4	4.0	.1	53N
51N	13	4.0	.4	3	4.1	.3	20	3.9	.2	5	3.8	.1	51N
49N	12	3.8	.2	4	3.9	.1	14	3.9	.2	48	3.7	.2	49N
47N	13	4.1	.4	4	4.2	.4	15	4.3	.5	4	4.4	.1	47N
45N	16	4.4	.5	5	4.9	.3	19	4.7	.4	7	4.8	.2	45N
43N	25	5.0	.4	10	5.5	.5	35	5.8	.8	7	5.1	.4	43N
41N	13	5.6	.6	29	6.0	.5	31	6.1	.6	10	6.5	.4	41N
39N	14	6.7	.4	9	7.7	.6	14	7.4	.4	51	7.0	.3	39N
37N	11	8.6	1.0	8	8.2	.4	13	7.9	.2	48	7.0	.4	37N
35N	27	8.8	1.1	10	9.1	.4	13	8.3	.4	54	7.2	.4	35N
33N	39	9.6	.7	15	9.3	.4	23	8.9	.5	63	7.9	.5	33N
31N	13	10.7	.9	15	9.9	.4	32	9.3	.5	62	8.4	.4	31N
29N	20	10.7	.5	21	10.0	.7	22	9.5	.5	221	8.1	.4	29N
27N	168	10.0	1.0	8	10.4	.5	42	9.5	.5	94	8.4	.6	27N
25N	14	10.7	.7	24	9.7	.6	63	9.1	.4	61	8.8	.5	25N

MONTH NOV DEPTH 400 METERS NUMBER OF OBSERVATIONS 1157 TABLE 10 11  
175W 165W 155W 145W

53N	2	3.7	.1	0	0	0	10	4.0	.2	3	3.8	.1	53N
51N	0	0	0	0	0	0	9	4.0	.2	0	0	0	51N
49N	0	0	0	2	3.7	.1	10	4.0	.3	35	3.7	.2	49N
47N	0	0	0	8	4.2	.5	12	4.2	.4	8	4.1	.2	47N
45N	0	0	0	9	4.7	.5	13	4.7	.3	7	4.6	.2	45N
43N	2	6.1	.2	6	5.2	.5	72	5.3	.3	7	5.3	.4	43N
41N	5	5.3	.2	7	6.1	.3	42	5.6	.6	4	6.5	.2	41N
39N	9	7.4	.7	15	7.1	.6	10	7.3	.5	14	6.6	.4	39N
37N	0	0	0	2	7.8	.1	14	7.8	.5	4	6.8	.4	37N
35N	1	9.6	0	4	8.2	.2	21	8.1	.4	17	7.5	.7	35N
33N	1	9.8	0	6	9.8	.5	19	8.6	.8	11	7.7	.5	33N
31N	13	10.4	.6	17	9.8	.5	24	9.4	.5	33	8.4	.7	31N
29N	23	10.5	.6	16	10.1	.6	52	9.3	.4	126	8.0	.6	29N
27N	27	11.1	.6	18	10.0	.3	93	9.7	.5	75	8.5	.5	27N
25N	17	11.0	.5	49	10.1	.7	87	9.4	.7	46	8.6	.7	25N

MONTH DEC DEPTH 400 METERS NUMBER OF OBSERVATIONS 640 TABLE 10 12  
175W 165W 155W 145W

53N	0	0	0	0	0	0	3	4.0	.4	0	0	0	53N
51N	0	0	0	0	0	0	4	3.8	.1	0	0	0	51N
49N	0	0	0	1	4.1	0	9	3.9	.2	40	3.7	.2	49N
47N	0	0	0	3	4.2	.5	9	4.2	.3	2	4.2	.1	47N
45N	2	4.3	.3	4	4.6	.2	3	4.7	.2	2	4.6	.0	45N
43N	4	5.4	.5	4	5.3	.2	24	5.8	.5	1	4.9	0	43N
41N	6	5.9	.5	17	6.1	.5	27	6.0	.4	15	6.2	.6	41N
39N	4	6.6	.1	3	7.2	.3	1	7.7	0	7	6.9	.7	39N
37N	6	7.1	.7	2	7.2	.2	2	7.8	.0	7	7.2	.6	37N
35N	4	8.6	.6	2	8.3	.1	3	8.6	.3	7	7.7	.6	35N
33N	1	8.1	0	5	9.4	.7	6	9.1	.3	12	8.1	1.7	33N
31N	6	10.2	.4	6	9.7	.4	9	9.6	.4	10	8.0	.5	31N
29N	12	11.1	1.0	10	10.0	.5	20	9.8	.3	111	8.0	.4	29N
27N	13	11.2	.7	7	10.2	.3	48	9.6	.5	34	8.7	1.0	27N
25N	9	11.8	.7	6	10.1	.7	44	9.3	.5	23	8.9	.3	25N



MONTH JAN DEPTH 500 METERS NUMBER OF OBSERVATIONS 53A TABLE 11 1  
175W 165W 155W 145W

53N	0	0	0	2	3.9	.1	14	3.5	.1	7	3.8	.3	53N
51N	0	0	0	4	3.7	.1	10	3.5	.1	2	3.7	.0	51N
49N	0	0	0	4	3.4	.0	12	3.5	.1	40	3.6	.1	49N
47N	0	0	0	4	3.8	.2	10	3.6	.1	0	0	0	47N
45N	0	0	0	4	4.2	.4	7	4.0	.2	2	4.1	.1	45N
43N	0	0	0	2	4.9	.3	10	4.4	.2	0	0	0	43N
41N	0	0	0	1	5.2	0	8	5.0	.3	1	4.6	0	41N
39N	0	0	0	2	6.0	.0	7	5.7	.2	0	0	0	39N
37N	0	0	0	5	6.5	.3	4	6.1	.2	0	0	0	37N
35N	1	6.7	0	5	6.8	.7	43	7.0	.9	1	5.4	0	35N
33N	1	7.4	0	4	7.2	.5	29	7.1	1.0	1	6.4	0	33N
31N	0	0	0	5	7.6	.5	12	7.0	.4	10	6.3	.3	31N
29N	0	0	0	4	8.0	.3	7	7.2	.2	111	6.3	.3	29N
27N	0	0	0	4	8.3	.4	26	7.9	2.7	51	6.6	.3	27N
25N	0	0	0	5	7.6	.5	40	6.9	.4	16	6.8	.4	25N

MONTH FEB DEPTH 500 METERS NUMBER OF OBSERVATIONS A65 TABLE 11 2  
175W 165W 155W 145W

53N	1	3.6	0	10	3.7	.1	6	3.6	.1	8	3.6	.2	53N
51N	33	3.7	.1	35	3.5	.1	7	3.6	.1	4	3.6	.1	51N
49N	12	3.5	.1	24	3.5	.1	5	3.5	.0	31	3.6	.1	49N
47N	4	3.4	.1	21	3.6	.1	2	3.8	.1	3	3.8	.2	47N
45N	2	3.6	.2	12	4.0	.1	0	0	0	0	0	0	45N
43N	6	5.1	.4	4	4.5	.2	3	4.6	.1	1	4.7	0	43N
41N	10	5.2	.3	6	4.8	.1	2	4.8	.1	7	5.2	.3	41N
39N	6	5.7	.4	3	6.2	.2	3	5.4	.2	0	5.8	.3	39N
37N	10	7.1	1.2	9	6.4	.3	7	6.3	.4	10	5.6	.4	37N
35N	2	6.8	1.0	2	6.9	.2	130	7.0	.7	7	5.9	.4	35N
33N	1	7.2	0	2	7.2	.1	64	7.1	.4	8	6.0	.2	33N
31N	3	9.4	.3	1	7.9	0	14	7.3	.4	15	6.5	.5	31N
29N	4	9.1	.7	4	8.8	.4	15	7.3	.5	110	6.3	.4	29N
27N	3	8.7	.1	1	7.9	0	47	7.2	.5	39	6.5	.3	27N
25N	2	9.2	.3	3	7.9	.4	25	7.1	.5	30	6.8	.9	25N

MONTH MAR DEPTH 500 METERS NUMBER OF OBSERVATIONS 760 TABLE 11 3  
175W 165W 155W 145W

53N	7	3.6	.1	2	3.5	.1	13	3.6	.2	3	3.4	.0	53N
51N	13	3.7	.2	1	3.6	0	15	3.5	.1	1	3.5	0	51N
49N	5	3.5	.1	0	0	0	14	3.6	.2	57	3.6	.1	49N
47N	6	3.5	.2	0	0	0	8	3.7	.1	1	3.8	0	47N
45N	5	3.6	.1	1	4.5	0	1	4.0	0	1	4.0	0	45N
43N	6	4.3	.2	0	0	0	3	4.6	.1	4	4.3	.1	43N
41N	5	4.6	.2	0	0	0	3	5.2	.1	2	4.9	.2	41N
39N	0	0	0	0	0	0	1	4.3	0	2	5.1	.2	39N
37N	6	7.3	.2	0	0	0	2	6.0	.1	4	5.5	.3	37N
35N	35	7.7	.5	0	0	0	4	6.4	.2	11	5.7	.3	35N
33N	57	7.5	.4	2	8.1	.1	1	6.5	0	16	6.0	.3	33N
31N	42	8.3	.6	5	7.9	.7	9	7.2	.5	19	6.2	.3	31N
29N	15	8.4	.5	1	7.6	0	13	7.0	.6	122	6.3	.3	29N
27N	5	8.8	.3	2	8.4	1.1	49	7.0	.5	48	6.6	.3	27N
25N	3	8.8	.1	50	7.2	.7	55	6.9	.4	24	6.8	.6	25N

MONTH APR DEPTH 500 METERS NUMBER OF OBSERVATIONS 749 TABLE 11 4  
175W 165W 155W 145W

53N	7	3.6	.0	10	3.6	.1	9	3.7	.3	3	3.8	.0	53N
51N	7	3.6	.1	16	3.5	.1	15	3.6	.1	4	3.8	.2	51N
49N	15	3.6	.1	11	3.6	.1	8	3.8	.3	58	3.6	.1	49N
47N	1	3.6	0	5	3.7	.2	3	3.9	.1	0	0	0	47N
45N	0	0	0	5	4.3	.1	4	4.1	.3	3	4.0	.1	45N
43N	16	4.5	.2	15	4.6	.3	30	4.6	.2	7	4.4	.1	43N
41N	6	5.1	.2	29	4.9	.1	23	4.9	.3	19	4.9	.3	41N
39N	10	5.7	.4	32	5.7	.4	4	5.8	.4	8	5.3	.4	39N
37N	3	6.8	.5	20	6.3	.2	2	5.7	.1	2	5.3	.1	37N
35N	2	8.2	.9	6	6.6	.3	3	6.9	.6	4	5.9	.4	35N
33N	1	7.7	0	2	7.1	.1	7	6.8	.6	6	6.1	.2	33N
31N	2	8.4	.1	5	7.9	.2	7	7.2	.3	16	6.3	.4	31N
29N	4	8.6	.1	10	8.0	.5	13	7.3	.6	118	6.4	.4	29N
27N	6	8.7	.5	3	8.2	.4	8	7.4	.6	45	6.6	.3	27N
25N	0	0	0	8	7.9	.6	46	7.0	.5	17	6.6	.3	25N



MONTH MAY DEPTH 500 METERS NUMBER OF OBSERVATIONS 422 TABLE 11 5  
1954 1954 1954

53N	20	3.5	.0	32	3.7	.2	4	3.8	.0	5	3.6	.2	53N
51N	12	3.6	.2	55	3.6	.1	5	3.6	.2	6	3.6	.1	51N
49N	40	3.5	.2	30	3.6	.1	12	3.6	.1	68	3.7	.1	49N
47N	8	3.4	.1	6	3.7	.2	4	3.9	.1	0	3.9	.1	47N
45N	7	3.7	.2	4	4.0	.2	4	4.5	.2	6	4.1	.1	45N
43N	2	4.5	.3	2	4.1	.0	5	4.7	.4	0	0	0	43N
41N	0	0	0	2	4.5	.1	4	4.9	.1	0	0	0	41N
39N	2	5.2	.6	2	5.2	.1	5	5.6	.1	1	5.5	.0	39N
37N	0	0	0	3	6.6	.3	3	6.1	.2	5	5.5	.3	37N
35N	2	7.0	1.0	2	7.6	.2	4	6.8	.4	21	5.8	.3	35N
33N	2	9.0	.1	0	0	0	5	7.2	.3	25	6.3	1.3	33N
31N	2	8.5	.9	1	7.0	0	5	7.4	.5	17	6.5	.8	31N
29N	1	9.2	0	2	8.7	.9	9	7.6	.7	146	6.5	.4	29N
27N	3	9.1	.1	3	8.2	.3	7	7.1	.6	73	6.6	.4	27N
25N	5	9.0	.5	1	7.8	0	49	7.0	.5	39	7.0	.4	25N

MONTH JUN DEPTH 500 METERS NUMBER OF OBSERVATIONS 906 TABLE 11 6  
1954 1954 1954

53N	52	3.6	.1	51	3.5	.2	15	3.7	.2	4	3.8	.2	53N
51N	80	3.6	.2	14	3.6	.1	13	3.6	.2	8	3.6	.1	51N
49N	61	3.4	.1	1	3.6	0	10	3.6	.4	41	3.7	.2	49N
47N	20	3.5	.2	2	3.6	.1	11	3.7	.1	7	3.9	.1	47N
45N	3	3.7	.1	0	0	0	7	4.0	.1	9	4.2	.3	45N
43N	2	5.0	.8	2	4.3	.2	11	4.5	.4	9	4.5	.2	43N
41N	11	5.3	.2	5	4.7	.2	9	5.0	.3	10	5.1	.4	41N
39N	2	5.6	.4	4	6.0	.1	6	5.5	.3	7	5.4	.2	39N
37N	2	6.7	.2	2	6.4	.3	3	6.1	.2	4	5.7	.5	37N
35N	1	7.4	0	0	0	0	3	6.8	.8	6	6.0	.4	35N
33N	0	0	0	8	7.6	.3	3	6.6	.4	21	6.2	.4	33N
31N	0	0	0	7	8.3	.9	9	7.5	.4	12	6.2	.2	31N
29N	1	0	0	9	8.3	.8	20	7.7	.4	151	6.5	.3	29N
27N	7	9.1	.7	1	8.0	0	10	7.8	.6	62	6.8	.4	27N
25N	5	8.4	.6	5	7.7	.6	40	7.3	.7	31	6.8	.4	25N

MONTH JUL DEPTH 500 METERS NUMBER OF OBSERVATIONS 1207 TABLE 11 7  
175W 165W 155W 145W

53N	56	3.6	.1	29	3.6	.2	26	3.6	.2	7	3.6	.2	53N
51N	116	3.6	.4	26	3.6	.3	18	3.5	.1	9	3.8	.1	51N
49N	94	3.5	.4	18	3.5	.1	13	3.5	.1	53	3.6	.1	49N
47N	16	3.5	.2	4	3.6	.1	6	3.8	.1	4	3.8	.1	47N
45N	2	4.1	.0	1	4.2	0	11	4.1	.2	9	4.2	.1	45N
43N	0	0	0	4	4.7	.1	25	4.6	.2	6	4.4	.1	43N
41N	122	4.3	.3	7	5.0	.2	21	4.9	.3	6	5.1	.1	41N
39N	3	5.6	.5	1	5.5	0	13	5.9	.4	10	5.0	.3	39N
37N	3	6.3	.8	9	6.3	.2	11	6.2	.4	14	5.9	.3	37N
35N	1	9.1	0	4	6.8	.3	11	6.5	.4	13	5.8	.4	35N
33N	2	7.2	.1	10	7.8	.7	11	6.4	.5	7	6.3	.3	33N
31N	2	9.0	.2	4	7.6	.4	20	7.2	.5	14	6.5	.5	31N
29N	3	8.8	.3	1	7.8	0	18	7.4	.6	109	6.4	.4	29N
27N	2	8.5	.3	0	0	0	38	7.7	.6	51	6.7	.4	27N
25N	8	8.5	.4	1	8.6	0	50	7.0	.5	30	6.8	.4	25N

MONTH AUG DEPTH 500 METERS NUMBER OF OBSERVATIONS 1285 TABLE 11 8  
175W 165W 155W 145W

53N	24	3.5	.1	30	3.5	.2	27	3.8	.4	24	3.7	.3	53N
51N	186	3.6	.2	51	3.5	.1	27	3.5	.2	25	3.7	.2	51N
49N	59	3.4	.1	33	3.5	.2	32	3.4	.2	69	3.7	.2	49N
47N	28	3.6	.3	14	3.6	.2	28	3.7	.3	14	3.9	.1	47N
45N	15	3.8	.2	4	3.7	.1	13	4.0	.1	12	4.2	.1	45N
43N	5	4.2	.1	5	4.3	.3	22	4.6	.3	9	4.7	.8	43N
41N	7	4.7	.2	3	5.1	.2	9	4.9	.1	9	4.8	.2	41N
39N	8	5.6	.8	4	5.6	.3	6	5.6	.3	5	5.2	.3	39N
37N	4	7.4	.2	2	6.6	.4	4	6.5	.5	6	5.7	.3	37N
35N	3	6.8	.1	5	6.9	.3	11	6.2	.4	9	5.1	1.2	35N
33N	6	8.7	2.3	2	7.6	.6	9	7.1	.5	7	6.1	.4	33N
31N	2	8.6	.1	2	7.9	.1	16	7.4	.7	7	6.4	.6	31N
29N	1	9.8	0	1	7.8	0	12	6.9	.2	159	6.4	.4	29N
27N	4	9.4	.9	3	7.7	.1	66	7.8	.6	43	6.7	.4	27N
25N	7	9.0	.5	2	8.2	.3	66	7.0	.5	17	6.8	.4	25N



MONTH SEP DEPTH 500 METERS NUMBER OF OBSERVATIONS 1003 TABLE 11 9  
175M 165M 155M 145M

53N	19	3.5	.0	27	3.6	.1	12	3.6	.1	5	3.5	.3	53N
51N	33	3.5	.2	32	3.5	.1	18	3.6	.1	9	3.7	.1	51N
49N	9	3.4	.0	18	3.5	.1	11	3.7	.2	60	3.6	.2	49N
47N	8	3.5	.1	6	3.6	.1	6	4.0	.2	2	4.1	.2	47N
45N	4	3.8	.1	11	3.9	.2	13	4.3	.5	1	0	0	45N
43N	4	4.3	.3	7	4.4	.3	25	4.5	.2	1	4.6	0	43N
41N	5	4.8	.1	11	5.3	.6	18	4.9	.3	0	0	0	41N
39N	5	5.4	.3	10	6.0	.5	23	5.9	.6	29	5.4	.2	39N
37N	1	7.1	0	14	6.4	.4	6	6.1	.3	11	5.6	.3	37N
35N	8	6.6	.5	2	6.9	.4	17	6.8	.7	10	5.8	.3	35N
33N	1	6.6	0	5	7.2	.2	17	7.0	.4	8	6.3	.9	33N
31N	5	7.9	.3	4	7.9	.6	14	7.2	.4	22	6.5	.5	31N
29N	1	9.4	0	10	8.2	.4	11	7.4	.4	193	6.5	.5	29N
27N	0	0	0	7	7.6	.6	48	7.4	.5	60	6.5	.3	27N
25N	10	9.1	.6	5	8.3	.4	54	7.1	.8	22	6.7	.5	25N

MONTH OCT DEPTH 500 METERS NUMBER OF OBSERVATIONS 1107 TABLE 11 10  
175M 165M 155M 145M

53N	0	0	0	1	3.6	0	6	3.0	.5	0	0	0	53N
51N	3	3.8	.4	1	4.2	0	4	3.7	.2	4	3.7	.1	51N
49N	8	3.7	.3	2	3.8	.0	8	3.7	.2	37	3.6	.2	49N
47N	7	3.7	.2	4	4.0	.4	6	4.0	.4	1	0	0	47N
45N	9	4.0	.2	3	4.2	.3	4	4.2	.2	0	0	0	45N
43N	22	4.4	.2	7	4.5	.2	19	5.0	.9	0	0	0	43N
41N	13	4.9	.5	22	4.9	.4	21	5.2	.5	8	5.4	.7	41N
39N	10	5.4	.2	5	6.6	.5	11	6.0	.3	44	5.6	.3	39N
37N	10	7.0	.6	4	6.3	.5	10	6.4	.2	39	5.5	.3	37N
35N	27	7.0	.9	6	7.2	.6	9	6.5	.4	37	5.7	.4	35N
33N	26	7.4	.5	8	7.2	.7	13	7.2	.5	40	6.1	.4	33N
31N	5	8.2	.7	4	8.0	.5	9	7.6	.5	45	6.4	.3	31N
29N	5	8.6	.4	12	7.8	.8	7	7.4	.3	204	6.3	.4	29N
27N	149	7.8	.9	6	8.1	.5	31	7.3	.4	54	6.5	.4	27N
25N	0	0	0	7	8.0	.8	32	6.9	.4	19	6.7	.4	25N

MONTH NOV DEPTH 500 METERS NUMBER OF OBSERVATIONS 635 TABLE 11 11  
175W 165W 155W 145W

53N	0	0	0	0	0	7	3.8	.2	3	3.7	.1	53N
51N	0	0	0	0	0	8	5.8	.2	0	0	0	51N
49N	0	0	0	1	3.5	10	3.8	.3	27	3.6	.1	49N
47N	0	0	0	4	4.4	9	3.0	.2	8	3.9	.2	47N
45N	0	0	0	2	4.6	9	4.3	.3	7	4.2	.2	45N
43N	0	0	0	4	4.4	61	4.5	.2	2	4.4	.0	43N
41N	1	4.7	0	0	0	25	4.7	.4	0	0	0	41N
39N	0	0	0	1	5.7	2	5.4	.3	4	5.1	.1	39N
37N	0	0	0	0	0	3	5.8	.2	0	0	0	37N
35N	0	0	0	1	6.2	6	6.2	.4	4	5.7	.5	35N
33N	0	0	0	0	0	9	6.6	.8	2	6.1	.1	33N
31N	2	8.1	.2	1	7.2	5	7.5	.3	11	6.2	.3	31N
29N	5	8.4	.9	3	7.9	25	7.0	.4	108	6.2	.4	29N
27N	12	8.7	.6	5	7.5	74	7.4	.6	53	6.5	.3	27N
25N	7	8.4	.2	27	7.4	53	7.0	.5	24	6.7	.4	25N

MONTH DEC DEPTH 500 METERS NUMBER OF OBSERVATIONS 380 TABLE 11 12  
175W 165W 155W 145W

53N	0	0	0	0	0	3	4.0	.5	0	0	0	53N
51N	0	0	0	0	0	4	3.7	.2	0	0	0	51N
49N	0	0	0	0	0	5	3.9	.1	32	3.6	.1	49N
47N	0	0	0	1	4.0	5	4.0	.2	0	0	0	47N
45N	0	0	0	2	4.2	2	4.3	.1	0	0	0	45N
43N	0	0	0	2	4.6	12	5.2	.3	0	0	0	43N
41N	0	0	0	20	5.3	7	5.3	.3	3	5.3	.2	41N
39N	0	0	0	2	5.8	1	6.0	0	3	5.8	.8	39N
37N	0	0	0	1	5.9	2	6.1	.0	3	5.4	.3	37N
35N	1	6.7	0	2	6.6	1	6.9	0	4	5.4	.2	35N
33N	0	0	0	2	7.1	3	7.1	.2	6	6.1	.3	33N
31N	0	0	0	2	7.4	5	7.8	.4	7	6.2	.3	31N
29N	0	0	0	2	8.0	10	7.5	.3	95	6.3	.1	29N
27N	2	9.1	.1	2	8.0	41	7.5	.5	27	6.6	.4	27N
25N	1	9.8	0	2	7.7	36	7.1	.4	19	6.7	.4	25N